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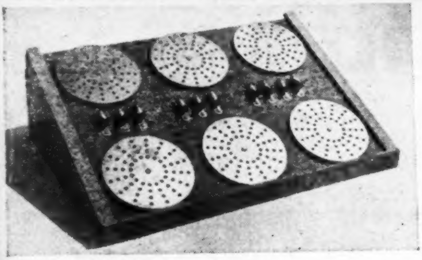

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May

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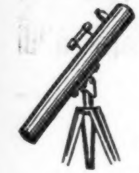

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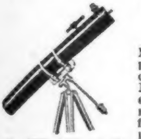

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EDITORIAL

RESEARCH IS ANTISOCIAL

XRAYS weren't discovered by logical deduction, followed by a logically constructed, crucial experiment; they were called "Xrays" because, when Roentgen first observed the effect, it was a complete, and unexplainable surprise. Unexplainable—and therefore, of course, unpremeditatable, unpredictable, and unplanned.

It was not the result of sound, scientifically organized research. It just happened.

What do we mean by the term "research" today?

I believe it can be shown that there are two broad classes of search-into-the-unknown, two classes that can be sharply differentiated in the sense "north" and "south" can be clearly and sharply differentiated. They are opposite *directions*—though it's perfectly obvious that New York City is north of Washington although it's south of Montreal. If you want to confuse an issue, obfuscate a point, if you want simply to defeat an argument, that makes things easy. Just confuse direction with position, and you can argue both ends against the middle, pick either side you want and "prove" it. "You can't say that New York is north! Why, it's certainly not even in the arctic zone!"

The two directions of search-of-the-unknown we might call *exsearch* and *insearch;* together, they constitute *research.*

By "insearch," I mean that class of search-of-the-not-yet-known which involves deducing the meaning implicit in the set of postulates we are working with—"making the self-evident obvious." Ideally, a sufficiently well designed, and sufficiently large logical machine, such as the direct lineal descendants of the modern electronic computers might be, could carry insearch to completion, and deduce *all* the consequences of a given set of postulates.

Theoretically, at least, a logic machine could deduce from Euclid's postulates, all the theorems of Euclidean geometry. Since this involves exhausting an infinity, the thing can't be done by any existable machine; see Isaac Asimov's "Hemoglobin and the Universe" for a detailed development of why it can't.

Insearch, then, is an infinite field; unlimited work can be done in deducing the consequences of a given set of postulates.

But . . . notice very carefully that "infinity" *is not "all"!* Although a logic machine could theoretically deduce *all* the consequences of Euclidean geometry, this term "all" is not the same as the term "all" in the phrase "all possible geometrical theorems."

There's the old pseudo-syllogism about the cat-o'-nine-tails:

1. Any cat has one more tail than no cat.
2. No cat has eight tails.
3. Therefore, any cat has nine tails.

The trick, of course, is that "no cat" means two totally different things in the first two statements.

"All consequences of Euclid's postulates" is a limited infinity—it's infinite, but bounded. It's like an asymptotic curve; it goes on forever, yet it never gets beyond certain limits.

And the theorems of curved spaces lie outside the limits of Euclidean geometry. Therefore the logical machine, even if it exhausted the infinity of Euclidean geometry, would none the less, never reach curved-space theorems.

The logic machine type of search is *insearch*—an infinite, but bounded field.

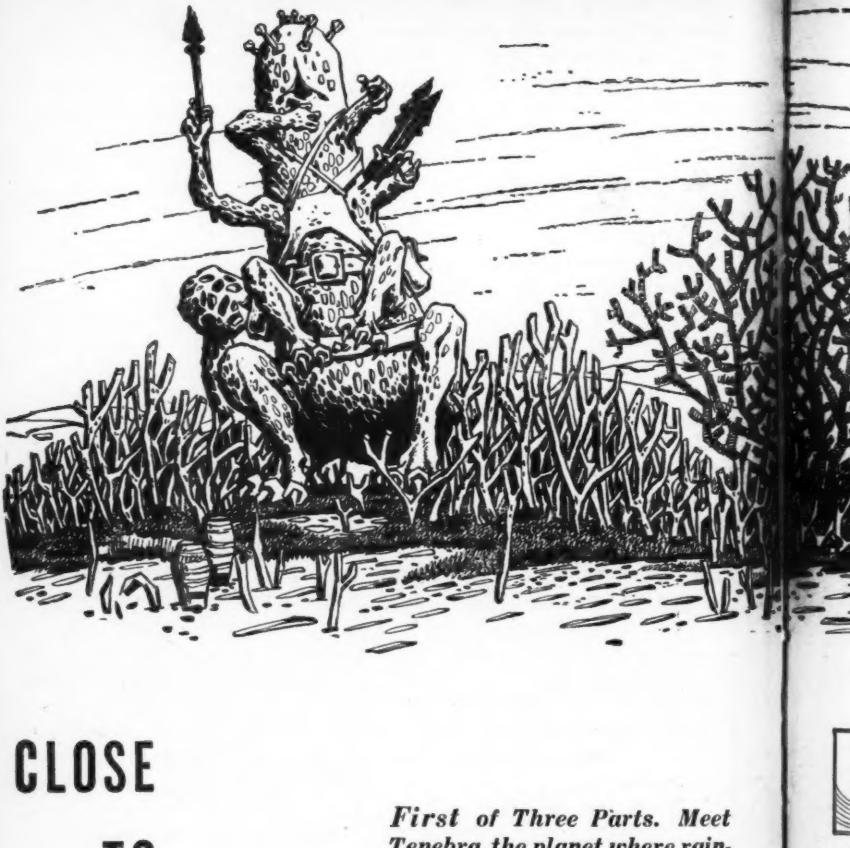
By *exsearch,* I mean search for the unknowns *outside the limits of known postulates.*

Einstein's work, of course, was exsearch; he went outside the limits of Euclidean geometry, which, up to that time, had been considered *the* laws of real-world space. Einstein didn't originate the curved-space geometry; the postulate Einstein transcended was the one which held "Euclidean geometry describes real-world space." Only by going outside the bounds of that postulate—doing exsearch outward from the known limits—was it possible to achieve Relativity.

No possible deductions staying within the then-known limits—no logic-machine, however immense or rapid—could have gone from Newtonian physics and Euclidean geometry to Relativity. It couldn't have, because the postulate "Euclidean geometry applies to real-world space," would have forced it to cancel out as inconsistent any deductions that led in that direction.

Exsearch is, necessarily, contralogical; it transcends the logical bounds. However, the moment it has done so, and established a new out-

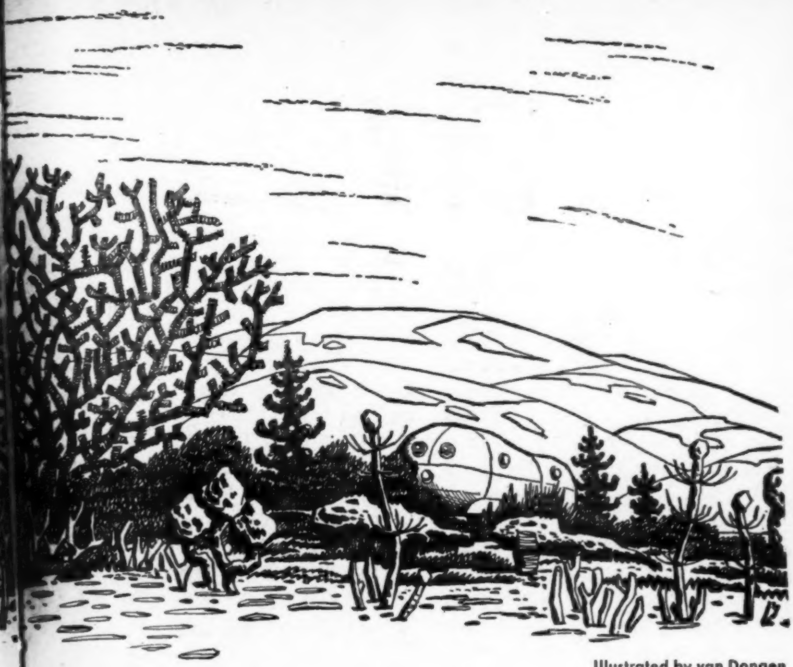
(*Continued on page* 159)



CLOSE TO CRITICAL

BY HAL CLEMENT

First of Three Parts. Meet Tenebra, the planet where raindrops are fifty feet through... and hard quartz rocks dissolve away like salt. Under three gravities, and a monstrously deep atmosphere, with oily seas of sulfuric acid, two children touch off a political situation that's...close to critical!



Illustrated by van Dongen

PROLOGUE

SOL, seen at a distance of sixteen light-years, is a little fainter than the star at the tip of Orion's sword, and could not have been contributing much to the sparkle in the diamond lenses of the strange machine. More than one of the watching men, however, got a distinct impression that the thing was taking a last look at the planetary system where it had been made. It would have been a natural thing for any sentient, and sentimental, being to do, for it was already falling toward the great, dark object only a few thousand miles away.

Any ordinary planet would have been glaringly bright at that range, for Altair is an excellent illuminator and was at its best right then—not that Altair is a variable star, but it rotates fast enough to flatten itself considerably, and the planet was in a part of its orbit where it got the maximum benefit from the hotter, brighter polar regions. In spite of this, the world's great bulk was visible chiefly as a fuzzy blot not very much brighter than the Milky Way which formed a background to it. It seemed as though the white glare of Altair were being sucked in and quenched, rather than allowed to illuminate anything.

But the eyes of the machine had been designed with Tenebra's atmosphere in mind. Almost visibly the robot's attention shifted, and the whitish lump of synthetic material turned slowly. The metal skeleton framing it kept pace with the motion, and a set of stubby cylinders lined themselves up with the direction of fall. Nothing visible emerged from them, for there was still too little atmosphere to glow at the impact of the ions, but the tons of metal and plastic altered their acceleration. The boosters were fighting the already fierce tug of a world nearly three times the diameter of distant Earth, and they fought well enough so that the patchwork fabrication which held them suffered no harm when atmosphere was finally reached.

The glitter faded out of the diamond eyes as the world's great gas mantle gradually enfolded the machine. It was dropping slowly and steadily, now; the word *cautiously* might almost have been used. Altair still glowed overhead, but the stars were vanishing even to the hypersensitive pickups behind those lenses as the drop continued.

Then there was a change. Up to now, the thing might have been a rocket of unusually weird design, braking straight down to a landing on outboard jets. The fact that the jet streams were glowing ever brighter meant nothing; naturally, the air was growing denser. However, the boosters themselves should *not* have been glowing.

These were. Their exhausts brightened still further, as though they were trying harder to slow a fall that was speeding up in spite of them, and the casings themselves began to shine a dull red. That was enough for the distant controllers; a group of brilliant flashes shone out for an instant, not from the boosters themselves but from points on the metal girders that held them. The struts gave way instantly, and the machine fell unsupported.

For only a moment. There was still equipment fastened to its outer surface, and a scant half second after the blowoff of the boosters a gigantic parachute flowered above the falling lump of plastic. In that gravity it might have been expected to tear away instantly, but its designers had known their business. It held. The incredibly thick atmosphere—even at that height several times as dense as Earth's—held stubbornly in front of the parachute's broad expanse and grimly insisted on the lion's share of every erg of potential energy given up by the descending mass. In consequence, even a three times Earthly surface gravity failed to damage the device when it finally struck solid ground.

For some moments after the landing, nothing seemed to happen. Then the flat-bottomed ovoid moved, separating itself from the light girders which had held the parachute, crawled on nearly invisible treads away from the tangle of metal ribbons, and stopped once more as though to look around.

It was not looking, however; for the moment, it could not see. There were adjustments to be made. Even a solid block of polymer, with no moving parts except its outer traveling and handling equipment, could not remain completely unchanged under an external pressure of some eight hundred atmospheres. The dimensions of the block, and of the circuitry imbedded in it, had changed slightly. The initial pause after landing had been required for the distant controllers to find and match the slightly different frequencies now needed to operate it. The eyes, which had seen so clearly in empty space, had to adjust so that the different index of refraction between the diamond and the new external medium did not blur their pictures hopelessly. This did not take too long, as it was automatic, effected by the atmosphere itself as it filtered through minute pores into the spaces between certain of the lens elements.

Once optically adjusted, the nearly complete darkness meant nothing to those eyes, for the multipliers behind them made use of every quantum of radiation the diamond could refract. Far away, human eyes glued themselves to vision screens which carried the relayed images of what the machine saw.

It was a rolling landscape, not too unearthly at first glance. There were large hills in the distance, their outlines softened by what might have been forests. The nearby ground was completely covered with vegetation which looked more or less like grass, though the visible trail the robot had already left suggested that the stuff was far more brittle. Clumps of taller growths erupted at irregular intervals, usually on higher ground. Nothing seemed to move, not even the thinnest fronds of the plants, though an irregular crashing and booming registered almost constantly on the sound pickups built into the plastic block. Except for the sound it was a still-life landscape, without wind or animal activity.

The machine gazed thoughtfully for many minutes. Probably its distant operators were hoping that life frightened into hiding by its fall might reappear; but if this were the case they were disappointed for the moment. After a time it crawled back to the remains of its parachute harness and played a set of lights carefully over the collection of metal girders, cables, and ribbons, examining them all in great detail. Then it moved away again, this time with a purposeful air.

For the next ten hours it quartered meticulously the general area of the landing, sometimes stopping to play its light on some object like a plant, sometimes looking around for minutes on end without obvious purpose, sometimes emitting sounds of varying pitch and loudness. This last always happened when it was in a valley, or at least not on the very top of a hill; it seemed to be studying echoes for some reason.

Periodically, it went back to the abandoned harness and repeated the careful examination, as though it expected something to happen. Naturally, in an environment having a three hundred seventy degree temperature, about eight hundred atmospheres pressure, and an atmosphere consisting of water heavily laced with oxygen and oxides of sulphur, things started to happen soon enough; and great interest was shown in the progress of the corrosion as it steadily devoured the metal. Some parts lasted longer than others; no doubt the designers had included different alloys, perhaps to check this very point. The robot remained in the general area until the last of the metal and vanished in slime.

At irregular intervals during this time, the surface of the ground shook violently. Sometimes the shaking was accompanied by the crashes which had first greeted the robot's "ears"; at other times it was relatively silent. The operators must have been bothered at first; then it became evident that all the hills in the neighborhood were well rounded with no steep cliffs, and the ground itself was free of both cracks and loose stones, so there was little reason to worry about the effect of quakes on the fabulously expensive mechanism.

A far more interesting event was the appearance of animal life. Most of the creatures were small, but were none the less fascinating for that, if the robot's actions meant anything. It examined everything that appeared, as closely as it possibly could. Most of the creatures seemed to be scale-armored and eight-limbed; some appeared to live on the local vegetation, others on each other.

With the harness finally gone, the attention of the robot's operators was exclusively occupied by the animals for a long time. The investigation was interrupted a number of times, but this was due to loss of control rather than distraction. The lack of visible surface features on Tenebra had prevented the men from getting a very precise measure of its rotation period, and on several occasions the distant ship "set" as far as the important part of the planet was concerned. Trial and error gradually narrowed down the uncertainties in the length of Tenebra's day, however, and the interruptions in control finally vanished.

The project of studying a planet three times the diameter of Earth looked rather ridiculous when attempted with a single exploring machine. Had that been the actual plan, of course it *would* have been ridiculous; but the men had something else in mind. One machine. is not much; a machine with a crew of assistants, particularly if the crew is part of a more or less world-wide culture, is something very different. The operators very definitely hoped to find local help—in spite of the rather extreme environment into which their machine had fallen. They were experienced men, and knew something of the ways of life in the universe.

However, weeks went by, and then months, with no sign of a creature possessing more than the rudiments of a nervous system. Had the men understood the operation of the lensless, many-spined "eyes" of the local animals they might have been more hopeful; but as it was most of them grew resigned to facing a job of several lifetimes. It was sheer chance that when a thinking creature finally did turn up it was discovered by the robot. Had it been the other way around—if the native had discovered the machine—history could easily have been very different on several planets.

The creature, when they did see it, was big. It towered fully nine feet in height, and on that planet must have weighed well over a ton. It conformed to the local custom as regarded scales and number of limbs, but it walked erect on two of the appendages, seemed not to be using the next two, and used the upper four for prehension. That was the fact that betrayed its intelligence; two long and two shorter spears, each with a carefully chipped stone head, were being carried in obvious readiness for instant use.

Perhaps the stone disappointed the human watchers, or perhaps they remembered what happened to metals on this planet and refrained from jumping to conclusions about the culture level suggested by the material. In any case, they watched the native carefully.

This was easier than it might have been; the present neighborhood, many miles from the original landing point, was a good deal rougher in its contours. The vegetation was both higher and somewhat less brittle, though it was still virtually impossible to avoid leaving a trail where the robot crawled. The men guessed at first that the higher plants had prevented the native from seeing the relatively small machine; then it became apparent that the creature's attention was fully occupied by something else.

It was traveling slowly, and apparently trying to leave as little trail as possible. It was also making allowance for the fact that to leave *no* trail was not practicable; periodically it stopped and built a peculiar arrangement consisting of branches from some of the rarer, springy plants and sharp stone blades which it took in seemingly endless supply from a large leather sack slung about its scaly body.

The nature of these arrangements was clear enough, after the native had gotten far enough ahead to permit a close inspection. They were booby traps, designed to drive a stone point into the body of anything attempting to follow in the creature's footsteps. They must have been intended against animals rather than other natives, since they could easily be avoided merely by parallelling the trail instead of following it.

The fact that the precaution was being taken at all, however, made the whole situation extremely interesting, and the robot was made to follow with all possible caution. The native traveled five or six miles in this fashion, and during this time set about forty of the traps. The robot avoided these without trouble, but several times tripped others which had apparently been set earlier. The blades did no harm to the machine; some of them actually broke against the plastic. It began to look as though the whole neighborhood had been "mined," however.

Eventually the trail led to a rounded hill. The native climbed this quickly, and paused at a narrow gully opening near the top. It seemed to be looking around for followers, though no organs of vision had yet been identified by the human watchers. Apparently satisfied, it drew an ellipsoidal object from its sack, examined it carefully with delicate fingers, and then disappeared into the gully.

In two or three minutes it was back, this time without its grapefruit sized burden. Heading down the hill once more, it avoided with care both its own traps and the others, and set off in a direction different from that of its approach.

The robot's operators had to think fast. Should they follow the native, or find out what it had been doing up the hill? The former might seem more logical, since the native was leaving and the hill presumably was not, but the second alternative was the one chosen. After all, it was impossible for the thing to travel without leaving some sort of trail; besides, night was approaching, so it wouldn't get far. It seemed safe to assume that it shared the characteristic of Tenebra's other animal life, of collapsing into helplessness a few hours after nightfall.

Besides, looking at the hilltop shouldn't take too long. The robot waited until the native was well out of sight, and then moved up the hill toward the gully. This, it turned out, led into a shallow crater, though the hill bore no other resemblance to a volcano; and on the crater floor lay perhaps a hundred ellipsoids similar to that which the native had just left. They were arranged with great care in a single line, and except for that fact were the closest things to loose stones that the men had yet seen on Tenebra. Their actual nature seemed so obvious that no effort was made to dissect one.

At this point there must have been a lengthy and lively discussion. The robot did nothing for quite a long time. Then it left the crater and went down the hill, picked its way carefully out through the "mine field" on the trail of the native, and settled down to travel.

This was not quite as easy as it would have been in the daytime, since it was starting to rain and visibility frequently obstructed by the drops. The men had not yet really decided whether it was better, in traveling at night, to follow valleys and remain submerged or stick to ridges and hilltops so as to see occasionally; but in this case the problem was irrelevant. The native had apparently ignored the question, and settled for something as close to a straight line as it could manage. The trail ran for some ten miles, and ended at a clearing before a cave-studded cliff.

Details could not be seen well. Not only was the rain still falling, but the darkness was virtually absolute even to the pickups of the robot. More discussion must have resulted from this; it was two or three minutes after the machine's arrival at the clearing that its lights went on and played briefly over the rock.

Natives could be seen standing inside the cave mouths, but they made no response to the light. They were either asleep in more or less human fashion, or had succumbed to the usual night-torpor of Tenebra's animal life.

No sign of anything above a stone age culture could be seen anywhere about, and after a few minutes of examination the robot cut off most of its lights and headed back toward the hill and crater.

It moved steadily and purposefully. Once at the hill top, several openings appeared in its sides, and from some of these armlike structures were extended. Ten of the ellipsoids were picked carefully from one end of the line—leaving no betraying gaps—and stowed in the robot's hull. Then the machine went back down the hill and began a deliberate search for booby traps. From these it removed the stone blades, and such of these as seemed in good condition—many were badly corroded, and some even crumbled when handled—disappeared into other openings in the lump of plastic. Each of these holes was then covered by a lid of the same incredibly stable polymer which formed the body of the machine, so that no one could have told from outside that the storage places were there.

With this completed, the robot headed away, at the highest speed it could maintain. By the time Altair rose and began turning the bottom of the atmosphere back into gas the machine, the stolen weapons, and the "kidnaped" eggs were far from the crater and still farther from the cave village.

I

Nick pushed through the tall plants into the open, stopped, and used several words of the sort Fagin had always refused to translate. He was neither surprised nor bothered to find water ahead of him—it was still early in the morning; it was annoying, however, to find it on each side as well. Sheer bad luck, apparently, had led him straight out along a peninsula, and this was no time for anyone to retrace his steps.

To be really precise, he didn't *know* that he was being followed, of course; but it simply hadn't occurred to him to doubt that he was. He had spent two days, since his escape, in making as confused and misleading a trail as possible, swinging far to the west before turning back toward home, and he was no more willing than a human being to admit that it might have been wasted effort. True, he had seen not the slightest sign of pursuers. He had been delayed by the usual encounters with impassable ground and wild animals, and none of his captors had caught up; the floating animals and plants which it was never safe to ignore completely had shown no sign of interest in anything behind him; his captors during the time he was with them had shown themselves to be hunters and trackers of superlative skill. Taking all these facts into account, he might have been excused for supposing that the fact of his continued freedom meant they were not following. He was tempted, but couldn't bring himself to believe it. They had wanted so badly to make him lead them to Fagin!

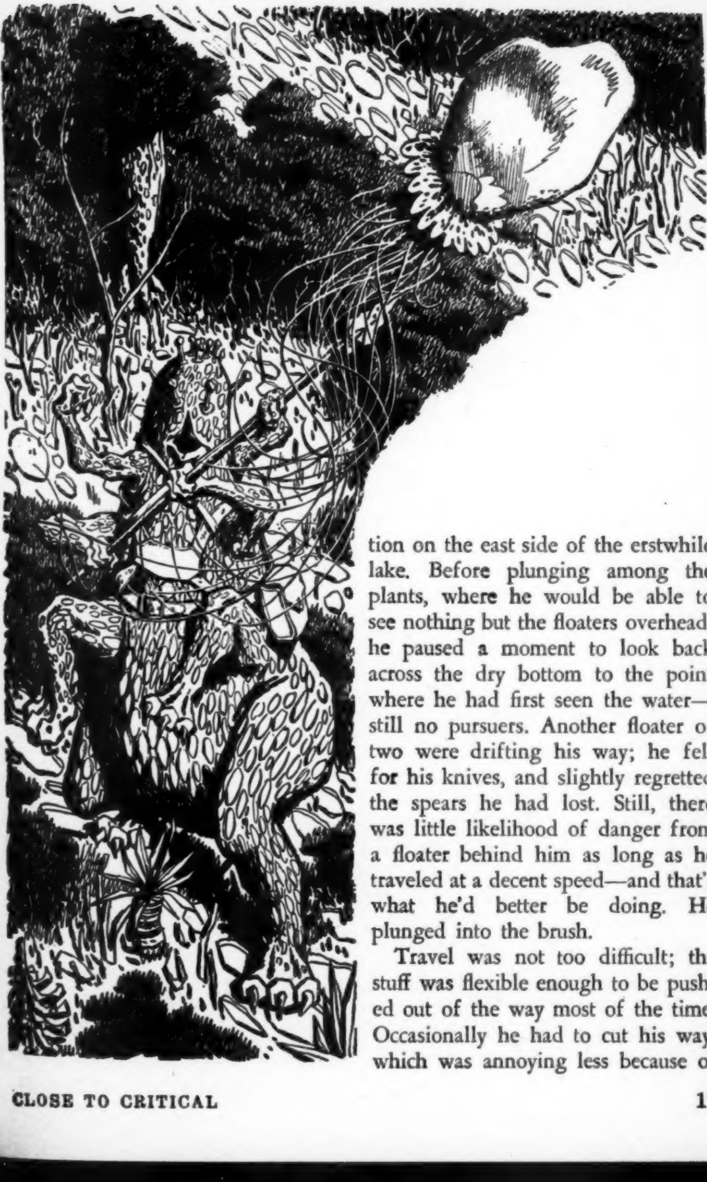
He came to himself with a start, and brought his mind back to the present. Theorizing was useless just now; he must decide whether to retrace his steps along the peninsula, and risk running into his ex-captors, or wait until the lake dried up and chance their catching him. It was hard to decide which was the smaller risk, but there was one check he could make.

He walked to the water's edge, looked at the liquid carefully, and then slapped it vigorously. The slow ripples which spread up the edge of the lake and out over its more or less level surface did not interest him; the drops which detached themselves did. He watched as they drifted toward him, settling slowly, and noted with satisfaction that even the largest of them faded out without getting back to the surface. Evidently the lake did not have long to go; he settled down to wait.

The breeze was picking up slowly as the plants awoke to the new day. He could smell it. He watched eagerly for its effect on the lake—not waves, but the turbulent hollows in the surface which would mark slightly warmer bodies of air passing over it. That would be the sign; from then on, the surface would probably drop faster down the lake bed than he could travel. The breeze should keep the air breathable, as long as he didn't follow the water too closely—yes, it couldn't be long now; the very point where he was standing was below the surface level of some parts of the lake. It was drying up.

The difference increased as he waited, the edge of the water slipping back in ghostly fashion. He followed it with caution, until a wall of water towered on either side. It began to look as though the peninsula were really a ridge across the lake; if so, so much the better.

Actually, it didn't quite reach. He had a wait for a quarter of an hour at the ridge's end while the rest of the lake turned back to air. He was impatient enough to risk breathing the stuff almost too quickly after the change, but managed to get away with it. A few minutes more brought him up the slope to the tall vegeta-



tion on the east side of the erstwhile lake. Before plunging among the plants, where he would be able to see nothing but the floaters overhead, he paused a moment to look back across the dry bottom to the point where he had first seen the water—still no pursuers. Another floater or two were drifting his way; he felt for his knives, and slightly regretted the spears he had lost. Still, there was little likelihood of danger from a floater behind him as long as he traveled at a decent speed—and that's what he'd better be doing. He plunged into the brush.

Travel was not too difficult; the stuff was flexible enough to be pushed out of the way most of the time. Occasionally he had to cut his way, which was annoying less because of the effort involved than because it meant exposing a knife to the air. Knives were getting rather scarce, and Fagin rather tight with those remaining.

The morning wore on, still without sight of pursuers. He made unusually good speed much of the time because of a remarkable lack of wild animals—par for a forty-mile walk being four or five fights, while he had only one. However, he more than lost the time gained when he ran into an area rougher than any he had ever seen. The hills were sharp and jagged instead of rounded; there were occasional loose rocks, and from time to time these were sent rolling and tumbling by unusually sharp quakes. In places he had to climb steep cliffs, either up or down; in others, he threaded his way through frighteningly narrow cracks—with no assurance that there was an opening at the other end. Several times there wasn't, and he had to go back.

Even here he left a trail, the local plant life being what it was; but with that area behind him he found it even harder to justify the feeling that he was being pursued. If his ex-captors really followed through that, they deserved to catch him! But still, however often he let his attention cover his rear, no sign of them appeared.

The hours passed, Nick traveling at the highest speed he could maintain. The one fight he had scarcely delayed him at all; it was a floater that saw him from ahead and dropped nearly to ground level in time to intercept him. It was a small one, so small that his arms outreached its tentacles; and a quick slash of one of his knives opened enough of its gas-bladders to leave it floundering helplessly behind him. He sheathed the weapon and raced on with scarcely diminished speed, rubbing an arm which had been touched lightly by the thing's poison.

The limb had ceased to sting, and Altair was high in the sky, when he finally found himself in familiar surroundings. He had hunted before this far from the home valley; rapid as changes were, the area was still recognizable. He shifted course a trifle and put on a final burst of speed. For the first time, he felt sure of being able to deliver a report of his capture, and also for the first time he realized that he had not tried to organize one. Just telling what had happened to him, item by item, might take too long; it was important that Fagin and the rest get away quickly. On the other hand, it would take a pretty complete explanation of the state of affairs to convince the teacher of that fact. Nick unconsciously slowed down as he pondered this problem. He was dragged from this reverie only by the sound of his own name.

"Nick! Is that really you? Where have you been? We thought you'd slept out once too often!"

At the first sound, Nick had reached for his knives; but he checked the movement as he recognized the voice.

"Johnny! It's good to hear proper

talk again. What are you doing this far out? Have the sheep eaten everything closer to home?"

"No, I'm hunting, not herding." John Doolittle pushed through the undergrowth into clear view. "But where have you been? It's been weeks since you went out, and since we stopped looking for you."

"You looked for me? That's bad. Still, I guess it didn't make any difference, or I'd have known it sooner."

"What do you mean? I don't understand what you're talking about. And what did you mean about it's being good to hear 'proper talk'? What other kind of talk is there? Let's hear the story."

"It's a long one, and I'll have to tell everyone as quickly as possible anyway. Come along home; there's no point telling it twice." He headed toward the valley they both called "home" without waiting to hear any answer. John "trailed" his spears and followed. Even without Nick's implication of trouble ahead, he would not willingly have missed the report. Fresh as he was, though, he had difficulty keeping up with the returned explorer; Nick seemed to be in a hurry.

They met two more of the group on the way, Alice and Tom, who were herding. At Nick's urgent but hasty words they followed toward the village as fast as their charge would permit.

Five more of the group were actually in the village, and Fagin was at his usual station in the center of the ring of houses. Nick called the teacher by name as he came in sight.

"Fagin! We're in trouble! What do we have for weapons that you haven't shown us yet?"

As usual there was a pause of a couple of seconds before an answer came back.

"Why, it's Nick. We had about given you up. What's all this about weapons? Do you expect to have to fight someone?"

"I'm afraid so."

"Who?"

"Well, they seem to be people just like us; but they don't keep animals, and they don't use fire, and they use different words for things than we do."

"Where did you run into these people, and why should we have to fight them?"

"It's a long story, I'm afraid. It will be better if I start at the beginning, I suppose; but we shouldn't waste any more time than we can help."

"I agree; a complete report will make the most sense to all of us. Go ahead." Nick settled his weight back on his standing legs and obeyed.

"I started south as we decided and went slowly, mapping as I went. Nothing much had changed seriously out to the edge of the region we usually cover in farming and grazing; after that, of course, it was hard to tell whether anything had changed at all recently, or in what way.

"The best landmark I saw by the end of the first day was a mountain, of quite regular conical shape and much higher than any I had ever seen before. I was tempted to climb it, but decided that detail mapping could be accomplished better later on; after all, my trip was to find new areas, not evaluate them.

"I passed to the east of the mountain shortly after sunrise the second day. The wind was remarkably strong in that region and seemed always to blow toward the mountain; I called it Storm Hill on the map. Judging by the wind, there ought to be a lot of night-growing plants there; any exploration should be planned to get off the hill before dark.

"As far as travel goes, everything was about as usual. I killed enough in self-defense to keep me in food, but none of the animals were at all unusual that day.

"The third morning, though, with the mountain out of sight, I got involved with something that lived in a hole in the ground and reached out an arm to catch things going by. It caught me around the legs, and didn't seem to mind my spears very much. I don't think I'd have gotten away if I hadn't had help."

"Help?" The startled question came without the pause characteristic of the teacher's remarks; it was Jim who asked it. "How could you have gotten help? None of us was down that way."

"So it wasn't one of us . . . at least, not exactly. He *looked* just like us, and used spears like ours; but when we finally managed to kill the thing in the hole and tried to talk to each other, his words were all different; in fact, it was quite a while before I realized that he was talking. He used the same sort of noises we do for words, but mixed them with a lot of others that we never learned from you.

"After a while I realized that the noises must be talk, and then I wondered why I hadn't thought of such a thing before—after all, if this person wasn't brought up by you, he'd have had to think up his own words for things, and it would be silly to expect them to be the same as ours. I decided to go with him and learn more; after all, this seemed a lot more important than just mapping. If I could learn his talk, he might know a lot more than we could find in months of exploring.

"He didn't seem to mind my trailing along, and as we went I began to catch on to some of his words. It wasn't easy, because he put them together in very strange ways; it wasn't just a matter of learning the noise he used for each object. We hunted together and fought together, though, and all the time we were learning to talk together. We didn't travel in a straight line, but I kept pretty good track of our path and can put his village on the map when I get the chance."

"Village?" It was Jim once more who interrupted; Fagin had said nothing.

"That's the only word I know for it. It wasn't at all like ours; it was a place at the foot of a steep cliff, and there were holes all over the face of the stone. Some of them were very small, like the solution holes you can see in any rock; others were very much larger, and there were people living in them. The one I was with was one of them.

"They were very surprised to see me, and tried to ask me a lot of questions; but I couldn't understand them well enough to give any answers. The one I had traveled with talked to them, and I suppose told how he had met me; but they stayed interested, and a lot of them were always watching me whatever I did.

"It was getting fairly late in the afternoon when we got to the cliff, and I was starting to wonder about camping for the night. I didn't realize just at first that these people lived in the holes in the rock, and when I finally caught on, I wasn't very happy about it. There are even more quakes down that way than around here, I noticed, and that cliff seemed an awfully unhealthy neighborhood. When the sun was almost down, I decided to leave them and camp a little way out on a hilltop I'd found, and then I discovered that they didn't want me to go. They were actually prepared to get rough in order to keep me around. I had learned a few more of their words by that time, though, and I finally convinced them that I wasn't trying to get away completely, and just wanted to spend the night by myself. There was a surprising amount of firewood around, and I was able to collect enough for the night without much trouble—in fact, some of the little ones helped me, when they saw what I wanted."

"Little ones? Weren't they all the same size?" Dorothy asked.

"No. That was one of the funny things I haven't had time to mention. Some of them weren't more than a foot and a half high, and some of them were nearly twice as tall as we are—nine feet or more. They all had the same shape as ours, though. I never found out the reason for that. One of the biggest ones seemed to be telling the others what to do most of the time, and I found that the little ones were usually the easiest to get along with.

"But that's getting off the story. When I built my fires a lot of them watched, but couldn't seem to make anything of it; when I lighted them, there was the biggest crowd of astonished people you ever saw. They didn't know anything about fire; that's why there was so much firewood near the cliff, I guess.

"Of course, it had started to rain by the time I lighted up, and it was funny to watch them; they seemed terribly afraid of being outside their holes in the rain, and still didn't want to miss watching the fires. They kept dithering back and forth, but gradually disappeared into their holes. After a while they were all gone, even though some of them stayed long enough to see what the fires did to the rain.

"I didn't see any more of them for the rest of the night. The water didn't get too deep along the face of the cliff, and they were out in the morning as soon as it had dried up.

"I could make a long story out of

the rest of the time, but that will have to wait. I learned to talk to them pretty well—the way they put their words together makes a lot of sense once you catch on to it—and got to know them pretty well. The main thing is that they were interested in whatever things *I* knew that *they* didn't, like fire and keeping herds of animals and raising plants for food; and they wanted to know how I'd learned all these things. I told them about you, Fagin; and maybe that was a mistake. A few days ago their teacher, or leader, or whatever you can call him, came to me and said that he wanted me to come back here and bring you down to the cliff so you could teach all the things you knew to his people.

"Now, that seemed all right to me. I judged that the more people you knew who could help in the things you want us to do, the better everything will be." He paused, to give Fagin a chance to answer.

"That's true enough," the voice from the robot agreed after the usual interval. "What went wrong?"

"My answer wasn't worded just right, it seems. I interpreted the proposition as a request, and answered that I would gladly come back home and ask you whether you would come to help the cave people. The leader—his name means Swift, in their words; all their names mean something—became very angry indeed. Apparently he expects people to do as he says without any question or hesitation. I had noticed that, but had been a little slow in applying my knowledge, I fear. Anyway, I didn't see how he could expect *you* to obey his orders.

"Unfortunately, he does; and he decided from my answer that you and the other people of our village would probably refuse. When that happens, his first thought is the use of force; and from the moment I made my answer he began to plan an attack on our village, to carry you away with him whether you wanted to go or not.

"He ordered me to tell him how to find our village, and when I refused he became angry again. The body of a dead goat that someone had brought in for food was lying nearby, and he picked it up and began to do terrible things to it with his knives. After a while he spoke to me again.

"You see what my knives are doing," he said. "If the goat were alive, it would not be killed by them; but it would not be happy. The same shall be done to you with the start of the new day, unless you guide my fighters to your village and its Teacher. It is too close to darkness now for you to escape; you have the night to think over what I have said. We start toward your village in the morning—or you will wish we had." He made two of his biggest fighters stay with me until the rain started. Even after all the time I'd been there no one ever stayed out of the caves after rainfall, so they left me alone when I lighted my fires.

"It took me a long time to decide

what to do. If they killed me, they'd still find you sooner or later and you wouldn't be warned in time; if I went with them it might have been all right, but I didn't like some of the things Swift had been saying. He seemed to feel things would be better if there were none of your own people left around after he captured you. That seemed to mean that no matter what I did I was going to be killed, but if I kept quiet I might be the only one. That was when I thought of traveling at night; I was just as likely to be killed, but at least I'd die in my sleep—and there *was* a little chance of getting away with it. After all, a lot of animals that don't have caves or fire and don't wake up as early as some of the meat-eaters still manage to live.

"Then I got another idea; I thought of carrying fire with me. After all, we often carry a stick with one end burning for short distances when we're lighting the night fires; why couldn't I carry a supply of long sticks, and keep one burning all the time? Maybe the fire wouldn't be big enough to be a real protection, but it was worth trying. Anyway, what could I lose?

"I picked out as many of the longest sticks around as I could carry, piled them up, and waited until two of my three fires were drowned by raindrops. Then I picked up my sticks, lighted the end of one of them at the remaining fire, and started off as fast as I could.

"I was never sure whether those people stayed awake in their caves or not—as I said, water doesn't get up to them—but now I guess they don't. Anyway, no one seemed to notice me as I left.

"You know, traveling at night isn't nearly as bad as we always thought it would be. It's not too hard to dodge raindrops if you have enough light to see them coming, and you can carry enough wood to keep you in light for a long time. I must have made a good twenty miles, and I'd have gone farther if I hadn't made a very silly mistake. I didn't think to replenish my wood supply until I was burning my last stick, and then there wasn't anything long enough for my needs in the neighborhood. I didn't know the country at all; I'd started west instead of north to fool any of the hole people who saw me go. As a result I got smothered in a raindrop within a minute after my last light went out; and it was late enough by then for the stuff to be unbreathable. I'd kept to high ground all the time, though, so I woke up in the morning before anything had made breakfast of me."

Nick paused, and like the other listeners—except Fagin—shifted himself to a more comfortable position on his resting legs as the ground shook underfoot. "I made a good, wide sweep around to the west, then circled north and east again to get back here. I was expecting to be caught every minute; those people are marvelous hunters and trackers. I traveled for several hours after dark each night, but stopped in time to find wood and build permanent fires before my sticks went out, after the first time. I didn't get caught by rain again, and they never caught up with me. They'll still find the village here sooner or later, though, and I think we ought to move out as quickly as possible."

For a moment there was silence after Nick finished his report; then the villagers began chattering, each putting forth his own ideas without paying much attention to those of his neighbor. They had picked up quite a few human characteristics. This noise continued for some minutes, with Nick alone waiting silently for Fagin to make some comment.

At last the robot spoke.

"You are certainly right about the cave dwellers finding the village here; they probably know where it is already. They would have been fools to catch up with you as long as they had reason to suppose you were going home. I see nothing to be gained, however, by leaving; they could follow us anywhere we might go. Now that they know of our existence, we're going to meet them in very short order.

"I don't want you people fighting them. I'm rather fond of you all, and have spent quite a long time bringing you up, and would rather not see you butchered. You're never done any fighting—it's one thing I'm not qualified to teach you—and you wouldn't stand a chance against that tribe.

"Therefore, Nick, I want you and one other to go to meet them. They'll be coming along your trail, so you'll have no trouble finding them. When you meet Swift, tell him that we'll gladly move to his village or let him move to ours, and that I'll teach him and his people all he wants. If you make clear that I don't know his language and he'll need you to talk to me, he'll probably be smart enough not to hurt any of us.

"When shall we start? Right away?"

"That would be best, but you've just had a long trip and deserve some rest. Anyway, a lot of the day is gone, and there probably won't be much lost by letting you get a night's sleep before you start. Go tomorrow morning."

"All right, Teacher." Nick gave no evidence of the uneasiness he felt at the prospect of meeting Swift again. He had known that savage for several weeks; Fagin had never met him. Still, the Teacher knew a lot; he had taught Nick virtually all he knew, and for a whole lifetime—at least, Nick's whole lifetime—had been the final authority in the village. Probably everything would come out as Fagin predicted.

It might have, too, had not the men behind the robot grossly underestimated the tracking ability of the cave dwellers. Nick had not even had time to get to sleep beside his watchfire after lighting up at rainfall when a surprised yell, in Nancy's voice, sounded from a point four fires to his left; and a split second later he saw Swift himself, flanked by a line of his biggest fighters which disappeared around the hill on either side, sweeping silently up the slope toward him.

II

"What do you do now?"

Raeker ignored the question; important as he knew the speaker to be, he had no time for casual conversation. He had to act. Fagin's television screens lined the wall around him, and every one showed the swarming forms of the fir-cone shaped beings who were attacking the village. There was a microphone before his face, with its switch spring-loaded in the open position so that casual talk in the control room would not reach the robot's associates; his finger was hovering over the switch, but he did not touch it. He didn't quite know what to say.

Everything he had told Nick through the robot was perfectly true; there was nothing to be gained by trying to fight. Unfortunately, the fight had already started. Even had Raeker been qualified to give advice on the defense of the village, it was too late; it was no longer even possible for a human being to distinguish the attackers from the defenders. Spears were sailing through the air with blinding speed—nothing merely tossed gets very far in a three-gravity field—and axes and knives flashed in the firelight.

"It's a good show, anyway." The same shrill voice that had asked the question a minute earlier made itself heard once more. "That firelight seems to be brighter than daylight, down there." The casual tone infuriated Raeker, who was not taking the predicament of his friends at all casually; but it was not a consideration of the identity or importance of the speaker which kept him from losing his temper and saying something unfortunate. Quite unintentionally, the onlooker had given him an idea. His finger stabbed at the microphone button.

"Nick! Can you hear me?"

"Yes, Teacher." Nick's voice showed no sign of the terrific physical effort he was exerting; his voice machinery was not as closely tied in with his breathing apparatus as is that of a human being.

"All right. Fight your way into the nearest hut as quickly as possible, all of you. *Get out of sight of me.* If you can't reach a hut, get behind a woodpile or something like that—below the curve of the hill, if nothing better is possible. Let me know as soon as you've all managed this."

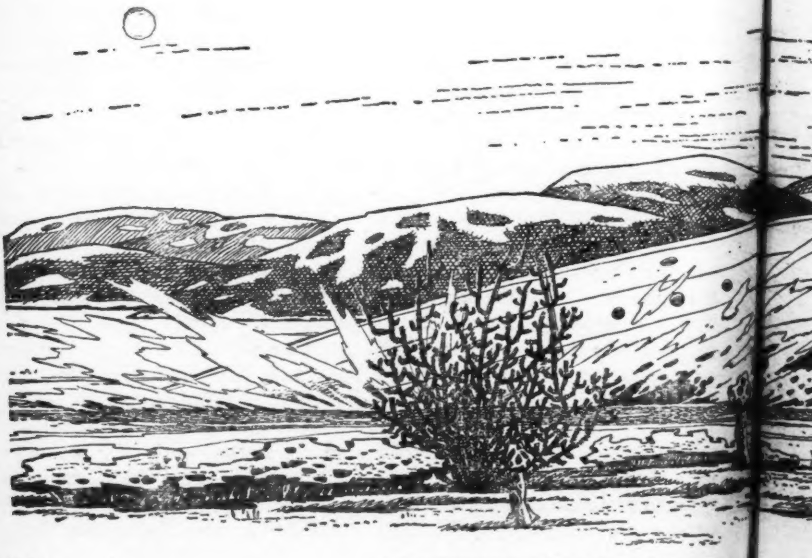
"We'll try." Nick had no time to say more; those in the control room could only watch, though Raeker's fingers were hovering over another set of switches on the complex panel before him.

"One of them's making it." It was the high voice again, and this time Raeker had to answer.

"I've known these people for sixteen years, and can't tell them from the attackers now. How can you identify them?" He let his glance shift briefly from the screens to the two nonhumans towering behind him.

"The attackers have no axes, only knives and spears," pointed out the speaker calmly. The man hastily turned back to the screens. He could not be sure that the other was right; only three or four axes could be seen, and their wielders were not very clearly visible in the swirling press. He had not noticed any lack of axes in the hands of the attackers as they came up the hill, in the brief moments after they became visible to the robot and before battle was joined; but there was no reason to doubt that someone else might have. He wished he knew Dromm and its people better. He made no answer to the slender giant's comment, but from then on watched the axes which flashed in the firelight. These really did seem to be working their way toward the huts which rimmed the top of the hill. Some failed to make it; more than one of the tools which had so suddenly become weapons ceased to swing as the robot's eyes watched.

But some did get there. For half a minute a four-armed, scaly figure stood at one of the hut doors, facing outward and smashing the crests of all attackers who approached too close. Three others, all apparently injured, crawled toward him and under the sweep of the powerful arms to take shelter in the building; one of these remained in the door-



way, crouching with two spears and guarding the axeman from low thrusts.

Then another defender battered his way to the side of the first, and the two retreated together inside the hut. None of the cave dwellers seemed eager to follow.

"Are you all inside, Nick?" Raeker asked.

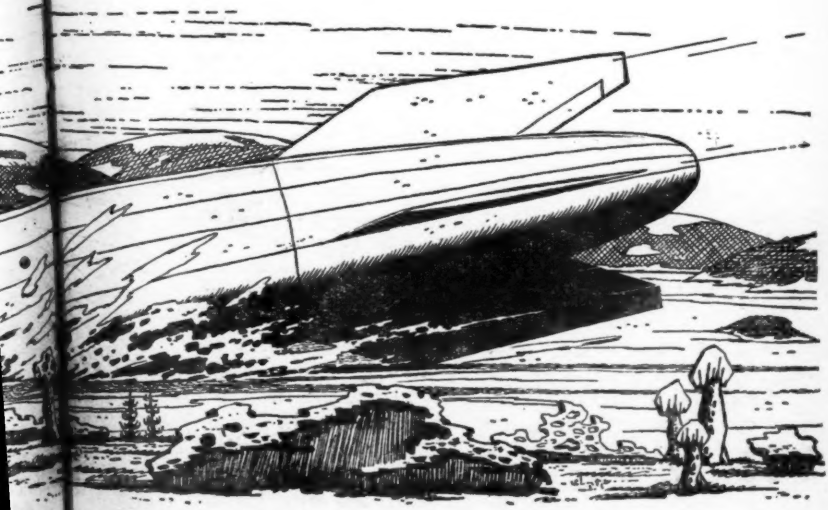
"Five of us are here. I don't know about the others. I'm pretty sure Alice and Tom are dead, though; they were near me at the beginning, and I haven't seen them for some time."

"Give a call to those who aren't with you. I'll have to do something very soon, and I don't want any of you hurt by it."

"They must either be safe or dead. The fighting has stopped; it's a lot easier to hear you than it was. You'd better do whatever it is without worrying about us; I think Swift's people are all heading toward you. Only a couple are outside the door here; the others are forming a big ring around where I saw you last. You haven't moved, have you?"

"No," admitted Raeker, "and you're right about the ring. One of the biggest of them is walking right up to me. Make sure you are all under cover—preferably somewhere where light won't reach you. I'll give ten seconds."

"All right," Nick answered. "We're getting under tables."



Raeker counted a slow ten, watching the approaching creatures in the screens as he did so. At the last number his fingers tripped a gang bar which closed twenty switches simultaneously; and as Nick described it later, "the world took fire."

It was only the robot's spotlights, unused now for years but still serviceble. It seemed quite impossible to the human watchers that any optical organs sensitive enough to work on the few quanta of light which reach the bottom of Tenebra's atmosphere could possibly stand any such radiance; the lights themselves had been designed with the possibility in mind that they might have to pierce dust or smoke—they were far more powerful than were really needed by the receptors of the robot itself.

The attackers should have been blinded instantly, according to Raeker's figuring. The sad fact slowly emerged that they were not.

They were certainly surprised. They stopped their advance for a moment, and chattered noisily among themselves; then the giant who was in front of the others strode right up to the robot, bent over, and appeared to examine one of the lights in detail. The men had long ago learned that the Tenebran vision organs were involved in some way with the spiny crests on their heads, and it was this part that the being, who Raeker suspected must be Swift, brought close to one of the tiny ports from which the flood of light was escaping.

The man sighed and shut off the lights.

"Nick," he called, "I'm afraid my idea didn't work. Can you get in touch with this Swift fellow, and try to get the language problem across to him? He may be trying to talk to me now for all I can tell."

"I'll try." Nick's voice came faintly through the robot's instruments; then there was nothing but an incomprehensible chattering that ran fantastically up and down the scale. There was no way to tell who was talking, much less what was being said, and Raeker settled back uneasily in his seat.

"Couldn't the handling equipment of that robot be used for fighting?" the shrill voice of the Drommian interrupted his worries.

"Conceivably, under other circumstances," Raeker replied. "As it happens, we're too far away. You must have noticed the delays between questions and answers when I was talking to Nick. We're orbiting Tenebra far enough out to keep us over the same longitude; its day is about four Earth ones, and that puts us over a hundred and sixty thousand miles away. Nearly two seconds delay in reflex would make the robot a pretty poor fighter."

"Of course. I should have realized. I must apologize for wasting your time and interrupting on what must be a very bothersome occasion."

Raeker, with an effort, tore his mind from the scene so far below, and turned to the Drommians.

"I'm afraid the apology must be mine," he said. "I knew you were coming, and why; I should at least have appointed someone to do the honors of the place, if I couldn't manage it myself. My only excuse is the emergency you see. Please let me make up for it by helping you now. I suppose you would like to see the *Vindemiatrix*."

"By no means. I would not dream of taking you from this room just now. Anyway, the ship itself is of no interest compared to your fascinating project on the planet, and you can explain that to us as well here while you are waiting for your agent's answer as anywhere else. I understand that your robot has been on the planet a long time; perhaps you could tell me more about how you recruited your agents on the planet. Probably my son would like to be shown the ship, if someone else could be spared from other duties."

"Certainly. I did not realize he was your son; the message telling us of your visit did not mention him, and I assumed he was an assistant."

"That is perfectly all right. Son, this is Dr. Helven Raeker; Dr. Raeker, this is Aminadorneldo."

"I am delighted to meet you, sir," piped the younger Drommian.

"The pleasure is mine. If you will wait a moment, a man is coming to show you over the *Vindemiatrix*—unless you would rather stay here and join conversation with your father and me."

"Thank you, I would rather see the ship."

Raeker nodded, and waited in silence for a moment or two. He had already pressed the call button which would bring a crewman to the observing room. He wondered a little why the younger being was with his father; presumably he was serving some purpose. It would be easier to talk without him, though, since the two were virtually indistinguishable to Raeker and it would be rather embarrassing to get them mixed up.

Both were giants from the human point of view; standing on their hind legs—a highly unnatural attitude for them—they would have towered nearly ten feet tall. Their general build was that of a weasel—or better, an otter, since the slender digits which terminated their five pairs of limbs were webbed. The limbs themselves were short and powerful, and the webs on the first two pairs reduced to fringes of membrane along the fingers—a perfectly normal evolutionary development for intelligent amphibious beings living on a planet with a surface gravity nearly four times that of Earth. Both were wearing harnesses supporting sets of small gas tanks, with tubing running inconspicuously to the corners of their mouths; they were used to an oxygen partial pressure about a third greater than human normal. They were hairless, but something about their skins reflected a sheen similar to that of wet sealskin.

They were stretched in an indescribably relaxed attitude on the floor, with their heads high enough to see the screens clearly. When the door slid open and the crewman entered, one of them came to his feet with a flowing motion and, introductions completed, followed the man out of the compartment. Raeker noticed that he walked on all ten limbs, even those whose webs were modified to permit prehension, though the *Vindemiatrix'* centrifugal "gravity" could hardly have made it necessary. Well, most men use both legs on the Moon, for that matter, though hopping on one is perfectly possible. Raeker dismissed the matter from his mind, and turned to the remaining Drommian—though he always reserved some of his attention for the screens.

"You wanted to know about our local agents," he began. "There's not very much to tell, in one way. The big difficulty was getting contact with the surface at all. The robot down there now represents a tremendous amount of engineering; the environment is close to the critical temperature of water, with an atmospheric pressure near eight hundred times that of Earth. Since even quartz dissolves fairly readily under those conditions, it took quite a while to design machines which could hold up. We finally did it; that one has been down a little over sixteen of our years. I'm a biologist and can't help you much with the technical details; if you happen to care, there are people here who can.

"We sent the machine down, spent nearly a year exploring, and finally found some apparently intelligent natives. They turned out to be egg-layers, and we managed to get hold of some of the eggs. Our agents down there are the ones who hatched; we've been educating them ever since. Now, just as we start doing some real exploring with them, this has to happen." He gestured toward the screen, where the huge Swift had paused in his examination of the robot and seemed to be listening; perhaps Nick was having some luck in his selling job.

"If you could make a machine last so long in that environment, I should think you could build something which would let you go down in person," said the Drommian.

Raeker smiled wryly. "You're quite right, and that's what makes the present situation even more annoying. We have such a machine just about ready to go down; in a few days we expected to be able to co-operate directly with our people below."

"Really? I should think that would have taken a long time to design and build."

"It has. The big problem was not getting down; we managed that all right with parachutes for the robot. The trouble is getting away again."

"Why should that be particularly difficult? The surface gravity, as I understand it, is less than that of my own world, and even the potential gradient ought to be somewhat smaller. Any booster unit ought to clear you nicely."

"It would if it worked. Unfortunately, the booster that will unload its exhaust against eight hundred atmospheres hasn't been built yet. They melt down—they don't blow up because the pressure's too high."

The Drommian looked a trifle startled for a moment, then nodded in a remarkably human manner.

"Of course. I should have thought—I remember how much more effective rockets are on your own planet than ours. But how have you solved his problem? Some radically new type of reactor?"

"Nothing new; everything in the device is centuries old. Basically, it's a ship used long ago for deep-ocean exploration on my own world—a bathyscaphe, we called it. For practical purposes, it's a dirigible balloon. I could describe it, but you'd do better to . . ."

"Teacher!" A voice which even Aminadabarlee of Dromm could recognize as Nick's erupted from the speaker. Raeker whirled back to his panel and closed the microphone switch.

"Yes, Nick? What does Swift say?"

"In effect, *no*. He wants nothing to do with anyone in this village but you."

"Didn't you explain the language problem to him?"

"Yes, but he says that if I was able to learn his words, you, who are my teacher, should be able to learn them even more quickly. Then he will not have to depend on people he doesn't trust to tell him what you're saying. I hope he's right. He's willing to leave the rest of us here, but you have to go with him."

"I see. You'd better agree, for now; it will at least keep those of you who are alive out of further trouble. It may be that we'll be able to arrange a little surprise for Swift in the near future. You tell him that I'll do what he says; I'll go along with him to the caves—I suppose he'll be starting back there tomorrow, though if he wants to stay longer don't discourage him. When they go, you stay where you are; find everyone who's still alive and get them back in shape—I suppose most of you are injured—and then wait until I get in touch with you. It may be some days, but leave it to me."

Nick was a fairly fast thinker, and remembered at once that Fagin could travel at night without the aid of fire—rain did not suffocate him. He thought he saw what the teacher planned to do; it was not his fault that he was wrong. The word "bathyscaphe" had never been used in his hearing.

"Teacher!" he called after a moment's thought, "wouldn't it be better if we moved as soon as we could, and arranged some other place to meet you after you escape? He'll come right back here, sure as rainfall."

"Don't worry about that. Just stay here, and get things back to normal as soon as possible. I'll be seeing you."

"All right, Teacher."

Raeker leaned back in his seat once more, nodding his head slowly. The Drommian must have spent a good deal of time on Earth; he was able to interpret the man's attitude.

"You seem a great deal happier than you were a few minutes ago," he remarked. "I take it you have seen your way out of the situation."

"I think so," replied Raeker. "I had forgotten the bathyscaphe until I mentioned it to you; when I did recall it, I realized that once it got down there our troubles would be over. The trouble with that robot is that it has to crawl, and can be tracked and followed; the bathyscaphe, from the point of view of the natives down there, can fly. It has outside handling equipment, and when the crew goes down they can simply pick up the robot some night and fly it away from the cliff. I defy Swift to do any constructive tracking."

"Then isn't Nick right? Won't Swift head straight for the village? I should think you'd have done better to follow Nick's suggestion."

"There'll be time to move after we get the robot. If they leave the village before, we'll have a lot of trouble finding them, no matter how carefully we arrange a meeting beforehand. The area is not very well mapped, and what there is doesn't stay mapped very well."

"Why not? That sounds rather strange."

"Tenebra is a rather strange planet. Diastrophism is like Earth's weather; the question is not whether it will rain tomorrow but whether your pasture will start to grow into a hill. There's a team of geophysicists champing at the proverbial bit, waiting for the bathyscaphe to go down so they can set up a really close working connection with Nick's group. The general cause we know—the atmosphere is mostly water near its critical temperature, and silicate rocks dissolve fairly rapidly under those circumstances. The place cools off just enough each night to let a little of the atmosphere turn liquid, so for the best part of two Earth days you have the crust washing down to the oceans like the Big Rock Candy Mountain. With three Earth gravities trying to make themselves felt, it's hardly surprising that the crust is readjusting all the time.

"Anyway, I think we're set up now. It won't be morning down there for a couple of days, and I don't see how much can happen until then. My relief will be here soon; perhaps, when he does, you would like to see the bathyscaphe with me."

"I should be most interested." Raeker was getting the impression that either the Drommians were a very polite race or Aminadabarlee had been selected for his diplomatic post for that quality. He didn't keep it long.

Unfortunately, there was a delay in visiting the bathyscaphe. When Raeker and the Drommian reached the bay where the small shuttle of the *Vindemiatrix* was normally kept, they found it empty. A check with the watch officer—ship's watch, not the one kept on the robot; the organizations were not connected—revealed that it had been taken out by the crewman whom Raeker had asked to show Aminadorneldo around.

"The Drommian wanted to see the

bathyscaphe, doctor, and so did young Easy Rich."

"Who?"

"That daughter Councilor Rich has tagging along. Begging the pardon of the gentleman with you, political inspection teams are all right as long as they inspect; but when they make the trip an outing for their offspring—"

"I have my son along," Aminadabarlee remarked.

"I know. There's a difference between someone old enough to take care of himself and an infant whose fingers have to be kept off hot contacts—" the officer let his voice trail off, and shook his head. He was an engineer; Raeker suspected that the party had descended on the power room in the near past, but didn't ask.

"Have you any idea when the shuttle will be back?" he queried.

The engineer shrugged. "None. Flanagan was letting the kid lead *him* around. He'll be back when she's tired, I suppose. You could call him, of course."

"Good idea." Raeker led the way to the signal room of the *Vindemiatrix*, seated himself at a plate, and punched the combination of the tender's set. The screen lighted up within a few seconds, and showed the face of Crystal Mechanic Second Class Flanagan, who nodded when he saw the biologist.

"Hello, doctor. Can I help you?"

"We were wondering when you'd be back. Councilor Aminadabarlee would like to see the bathyscaphe, too." The nearly two-second pause while light made the round trip from *Vindemiatrix* to tender and back was scarcely noticed by Raeker, who was used to it; the Drommian was rather less patient.

"I can come back and pick you up whenever you want; my customers are fully occupied in the 'scaphe.' " Raeker was a trifle surprised.

"Who's with them?"

"I was, but I don't really know much about the thing, and they wanted to poke around by themselves. They promised not to touch anything."

"That doesn't sound very safe to me; how old is the Rich girl? About twelve, isn't she?"

"I'd say so. I wouldn't have left her there alone, but the Drommian was with her, and said he'd take care of things."

"I still think—" Raeker got no farther. Four sets of long, webbed, wire-hard fingers tightened on his shoulders and upper arms, and the sleek head of Aminadabarlee moved into the pickup area beside his own. A pair of yellow-green eyes stared at the image in the plate, and a deeper voice than Raeker had yet heard from Drommian vocal cords cut across the silence.

"It is possible that I am less well acquainted with your language than I had believed," were his words. "Do I understand that you have left two children unsupervised in a ship in space?"

"Not exactly children, sir," protested Flanagan. "The human girl is old enough to have a good deal of sense, and your own son is hardly a child; he's as big as you."

"We attain our full physical growth within a year of birth," snapped the Drommian. "My son is four years old, about the social equivalent of a human being of seven. I was under the impression that human beings were a fairly admirable race, but to give responsibility to an individual as stupid as you appear to be suggests a set of social standards so low as to be indistinguishable from savagery. If anything happens to my boy—" He stopped; Flanagan's face had disappeared from the screen, and he must have missed the last couple of sentences of Aminadabarlee's castigation; but the Drommian was not through. He turned to Raeker, whose face had gone even paler than usual, and resumed, "It makes me sick to think that at times I have left my son in charge of human caretakers during my years on Earth. I had assumed your race to be civilized. If this piece of stupidity achieves its most likely result, Earth will pay the full price; not a human-driven ship will land again on any planet of the galaxy that values Drommian feelings —the story of your idiocy will cross the light-years, and no human ship will live to enter Drommian skies. Mankind will have the richly earned contempt of every civilized race in—"

He was cut off, but not by words. A rending crash sounded from the speaker, and a number of loose objects visible on the screen jerked abruptly toward a near wall. They struck it loudly and rebounded, but without obeying the laws of reflection. They all bounced the same way —in the direction which Raeker recognized with a sinking feeling as that of the tender's air lock. A book flew past the pickup area in the same direction, and struck a metal instrument traveling more slowly.

But this collision went unheard. No more sound came from the speaker; the tender was silent, with the silence of airlessness.

III

Nick Chopper stood in the doorway of his hut and thought furiously. Behind him the seven other survivors of the raid lay in various stages of disrepair. Nick himself was not entirely unscathed, but he was still able to walk—and, if necessary, fight, he told himself grimly. All of the others except Jim and Nancy would be out of useful action for several days at least.

He supposed that Fagin had been right in yielding to Swift as he had; at least, the savage had kept his word about letting Nick collect and care for his wounded friends. Every time Nick thought of the attack, however, or even of Swift, he felt like resuming the war. It would have given him intense pleasure to remove Swift's scales one by one and use them to shingle a hut in full view of their owner.

He was not merely brooding, however; he was really thinking. For the first time in a good many years, he was questioning seriously a decision of Fagin's. It seemed ridiculous to suppose that the Teacher could get help; he hadn't been able to fight away from the cave village without Swift's people during the attack, and if he had any powers Nick didn't know about that was certainly the time to use them. Getting away at night didn't count; he'd be tracked and caught first thing in the morning.

But wait a minute. What could the cave dwellers actually *do* to Fagin? The hard, white stuff the teacher was covered with—or made out of, for all Nick knew—might be proof against knives and spears; the point had never occurred to Nick or any of his friends. Maybe that was why Fagin was being so meek now, when his people could be hurt; maybe he planned to act more constructively when he was alone.

It would be nice to be able to talk it over with the teacher without Swift's interference. Of course, the chief couldn't eavesdrop very effectively, since he couldn't understand English, but he would know that a conference was going on, and would be in a pretty good position to block any activity planned therein. If it were practical to get Swift out of hearing—but if that were possible, the whole thing would be solved anyway. The meat of the problem was the fact that Swift *couldn't* be handled.

Of course, it was night, and therefore raining. The invaders were being protected by the village fires, at the moment; however, Nick reflected, no one was protecting the fires themselves. He glanced upward at the thirty- to fifty-foot raindrops drifting endlessly out of the black sky, following one of them down to a point perhaps three hundred yards above his head. There it vanished, fading out in ghostly fashion as it encountered the updraft from the village fires. It was not the drops straight overhead which were troublesome—not to Fagin's village.

Another, larger drop beyond the glowing protective double ring accomplished more. It settled to the ground fifty yards beyond one of the outer fires. The ground had been cooled enough by its predecessors to let it remain liquid, so for a short time it was visible as it drifted toward the blaze under the impulse of the fires' own convection currents. Then radiated heat made it fade out; but Nick knew it was still there. It had been crystal clear, free of suspended oxygen bubbles; it was now pure steam, equally free of combustion's prime necessity. Nick would have nodded in satisfaction, had his head been capable of free movement, when the fire in the path of the invisible cloud suddenly began to cool and within a few seconds faded from visibility.

If any of the attackers noticed the incident, they certainly did nothing. None of them moved, and the fire remained out. Five seconds later Nick had his plan worked out.

He emerged fully from the hut and walked over to the main fuel magazine. Here he loaded himself with as much as he could carry, and took it back to the building where the wounded were lying. None of the raiders stopped or questioned him; none had spoken to him since the truce had been concluded. Inside the hut, he quickly built and lighted a fire. When it had come to an even glow he lighted a torch from it and walked back to the woodpile. Casually he stuck the cold end of the torch into the pile, as though to illuminate his work; then he made several more trips carrying fuel to the hut, leaving the torch where he had placed it. Eventually the building could hold no more wood, so he ceased his labor.

But he left the torch.

Tenebran wood glows punklike; it does not flame. It took some time for the stick to burn down to its base, and still longer before the increase in brilliancy of the region around the village showed that the main stack had properly caught. Even then, there was no reaction from the invaders. These had gathered into a tight group surrounding the robot, which had remained in its usual position at the center of the village.

By this time, more than half of the peripheral fires were out, most of them in the outer ring. One or two of the inner ring had also been smothered, and Nick began to get an impression of uneasiness from the clustered cave dwellers. When the last of the outer fires died, a mutter began to grow from their ranks, and Nick chuckled to himself. Swift just *might* have a little trouble handling his men as their protection from the rain vanished, and no caves were available. If the muttering continued, the chief would certainly have to take some action; and all he could do, as far as Nick would see, would be to ask Nick himself for help. That should put quite a dent in his authority.

But Nick had underestimated the big fellow. From the vicinity of the robot his voice suddenly rapped out in a series of orders; and obediently a dozen of his men ran from the outskirts of the group toward one of the fires which was still burning. There, to Nick's disgust, they seized sticks from the small woodpile at its side, lighted their ends, carried the torches to the dead fires, and rekindled these without the slightest difficulty. Evidently the cave dwellers didn't sleep *all* night in their holes; someone had watched his fire-technique long enough to get at least some of the idea. If they also knew about replenishing—they did. More wood was being put on all the fires. Nick noted with satisfaction, however, that it was far too much wood; he wouldn't have to wait too long before the small woodpiles beside each fire were exhausted. The cave dwellers seemed to have taken the now fiercely glowing main pile as another bonfire; Swift was going to have to do some fast thinking when the reserves disappeared.

This he proved able to do. It was fortunate that Nick had been able to keep awake, for Swift's men did not announce their coming. They simply came.

They were unarmed, rather to Nick's surprise, but they approached the hut door without hesitation, almost as though they expected him to stand aside for them. When he did not, they stopped, the foremost half a spear's length away. He may have intended to say something, but Nick spoke first.

"What do you want? My friends are all wounded, and can't help you. There is no room in the hut. Go to the others, if you want shelter."

"Swift sent us for wood." It was a calm statement, with no "or else" concealed in it, as far as Nick could tell by the tone.

"I have only enough to keep my own fire going for the night. You will have to use the other piles."

"They are used up."

"That isn't my fault. You know that wood burns up in a fire; you shouldn't have put so much on."

"You didn't tell us that. Swift says that you should therefore give us your own wood, which we saw you taking, and tell us how much to use."

It was evident that the chief had seen through at least part of Nick's scheme, but there was nothing to do now but carry it through.

"As I said, I have only enough for this fire," he said. "I shall not give it up; I need it for myself and my friends."

Very much to his surprise, the fellow retreated without further words. Apparently he had gone as far as his orders extended, and was going back for more. Initiative did not flourish under Swift's rule.

Nick watched the group as it rejoined the main crowd and began to push its way through to the chief. Then he turned and nudged Jim.

"Better get up, you and Nancy," he whispered. "Swift can't let this go. I'll fight as well as I can; you keep me in ammunition."

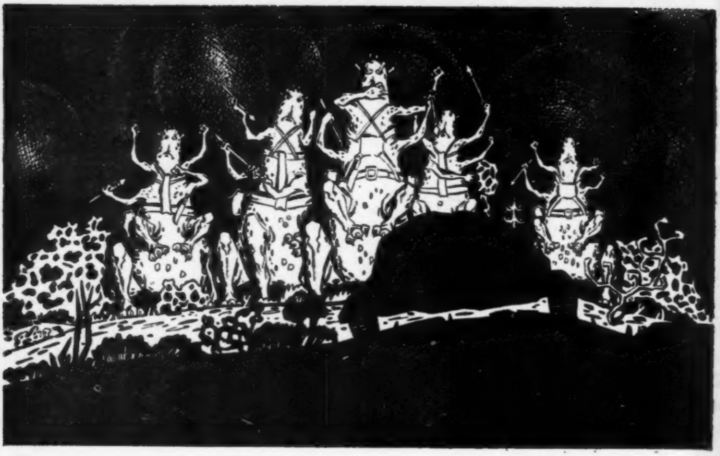
"What do you mean?" Nancy's thoughts were less swift than usual.

"I can't fight them with axes; they'd be through in two minutes. I'm tired and slow. I'm going to use torches—remember what it feels like to be burned? They don't; I warned them about it when I was at their village, and they were always very careful, so none of them has any real experience. They're going to get it now!"

The other two were on their feet by this time. "All right," agreed Jim. "We'll light torches and pass them to you whenever you call. Are you going to poke with the things, or throw them? I never thought of fighting that way."

"Neither did I, until now. I'll try poking first, so give me long ones. If I decide to throw, I'll call for really short ones—we don't want them throwing the things back to us, and they will if there's a spot where they can get a grip. They're not too stupid for that—not by a long day's journey."

Jim and Nancy gestured agreement and understanding, and turned to the piles of firewood that almost covered the floor. The fire was burning quite close to the doorway; Nick took his stand once more in the opening, and



the other two on either side of the blaze, where they could hand torches to him as rapidly as he might need. Everything was ready when the party returned to the hut.

It was a little larger this time; Swift himself had joined it. They approached to within half a dozen yards, and spoke briefly and to the point.

"If you don't let us in to get the wood, my knives will take care of you. You have seen what I mean."

"I have seen," acknowledged Nick. "That's why I want nothing to do with you. If you come any closer, it is at your own risk."

He had never before seen Swift hesitant or uncertain, but for just a moment now the chief seemed to be running over the implications of Nick's words. Then he was himself again.

"Very well," he said, and swept forward with four spears couched along his forearms.

Nick's battle plan had to be scrapped at the beginning; the spears were longer than his torches. He did succeed in striking their points aside before they touched him, but he could not reach Swift even with the spears out of the way. His hatred of the chief seized his judgment for an instant, and he hurled both his left-hand torches at the giant's crest.

Swift ducked, barely in time. Those behind him were in a close-packed wedge whose central members were unable to dodge quickly enough, and howls of pain arose in several voices as the torches struck and scattered burning coals in all directions. The chief ducked backward to just beyond spear's length, resuming his attack stance.

"Half circle!" he snapped. The warriors obeyed with speed and precision, forming a thin line centered on Nick. "Now all at once—get him!" The semicircle contracted and the spear points came toward the door.

Nick was not too alarmed. None of the attackers was in a position to deliver the upward thrust which would get under scales; stone points were more likely to push him back than to penetrate. If he were pushed back against anything solid, of course, it would be a different story; the real danger at the moment, though, was that several of the fighters would get within knife range at once, and so occupy him that a spearsman could get close enough for long enough to strike from below. For just an instant he hesitated, wondering whether he should throw or strike; then he made up his mind.

"Short ones!" he ordered to the helpers behind him.

Nancy already had several foot-long sticks with their ends in the fire; she had them in his hands instantly, and was lighting others. For perhaps ten seconds Nick did his best to emulate a machine gun. More than half his projectiles missed, but a good many didn't; and after the first three or four seconds another factor complicated the fight. Still burning torches and fragments of glowing wood were being more and more thickly scattered before the doorway, and the attackers were getting involved with these. Feet were even more sensitive to the fire than were scales, and the effect was distracting, to put it mildly.

Swift, to do him justice, stayed with his men and fought as hard as any; but at length even he had had enough and withdrew a few yards, limping slightly. Nick laughed aloud as he went.

"Better get your own firewood, Swift, my friend! Of course, you won't find any within an hour's walk of the village; we've used it up long ago. Even if you know where the best places to get it are, you won't be able to get there and back through the rain. You needn't worry, though; we'll take care of you when you go to sleep. I wouldn't want anything to eat you, friend Swift!"

It was almost funny to watch Swift's fury. His hands tightened on the spear shafts, and he rose to full height on his walking legs, shaking all over with rage. For several seconds it seemed an even bet whether he would hurl the spears or charge the door across the scattered coals. Nick was perfectly ready for either, but was hoping for the latter; the mental picture of Swift with burned feet was a very attractive one.

But the chief did neither. In the midst of his fury he suddenly relaxed, and the spear points dropped as though he had forgotten them for a moment. Then he shifted the weapons backward until he was holding them near their centers of gravity, in "carry" position, and turned away from the hut. Then, seemingly as an afterthought, he turned back and spoke to Nick.

"Thanks, Chopper. I didn't expect that much help. I'd better say good-by, now; and so had you—to your teacher."

"But—you can't travel at night."

"Why not? You did."

"But how about Fagin? How do you know he can?"

"You told me he could do anything you could. You also said he'd agreed to do what we said. If he forgets that, or changes his mind, we can thank you for showing us what to do. Do you suppose he'll like the touch of fire any better than we do?" Swift chuckled and strode swiftly back to the main group, bawling orders as he went. Nick began shouting at least as loudly.

"Fagin! Did you hear that? Fagin! Teacher!" In his anxiety he forgot the time it always took the teacher to answer, and drowned the robot out for a moment. Then its answer became audible.

"What's the matter, Nick?" It was not possible to tell from the voice that Raeker was not at the other end; Nick's people had been given a general idea of the "teacher" situation, but not all the details, and they thought inevitably of the robot as an individual. This was virtually the first time it had made any difference; the man on watch knew the general picture, of course, having been briefed by Raeker when the latter had gone off duty, but he had not actually been present during Swift's initial attack or the subsequent truce. Consequently, Nick's words did not mean all they might have to him.

"Swift is going to start back for the caves right away; he says he'll use fire on you if you don't go with him. Can you stand that?"

There was a little more than the usual hesitation. No one had ever measured the temperature of a Tenebran fire, and the man on watch was not enough of a physicist to hazard a guess from its radiation output. The main consideration in his mind was the cost of the robot.

"No," he answered. "I'll go along with him."

"What shall we do?"

Raeker's order for the villagers to stay put was one thing he had not mentioned to his relief; he had expected to be back on duty long before the start of the journey. The relief did the best he could under the circumstances.

"Use your own judgment. They won't hurt me; I'll get in touch with you again later."

"All right." Nick carefully refrained from reminding the teacher of his earlier command; he liked the new one much better. He watched in silence as the invaders, under Swift's orders, collected what torches they could from the nearly spent fires. Then they clustered around the teacher, leaving an opening in the crowd on the side they wished him to go. It was all done without words, but the meaning was plain enough. The robot swung around on its treads and headed south, the cave dwellers swarming after it.

Nick spent only a few moments wondering whether they'd find more torch wood before using up what they had. He had turned his mind to other matters even before the cavalcade was out of sight.

He had been given a free hand. Very well, he still felt that leaving the village was best; they would do so as soon as possible. Of course, it wouldn't be possible for a few days, until everyone was able to travel again, but the time could be spent in planning. There was certainly the question of where to go, and the corollary one of how to get there—Nick began to realize with a shock just what leaving the village, with its lifetime accumulation of property and equipment, would mean—and how to get back in touch with Fagin when the move was accomplished. It was easy to tell one's self that the teacher could always find them wherever they went; but Nick was mature enough to doubt the omniscience of anyone, including the robot. That meant, then, three problems to solve. Since Nick had no desire to resemble Swift in any way, he postponed solving them until the others would be awake and able to help in the discussion.

The fire lasted until morning, but only just, and only by virtue of Nick's running around the hut rapidly on a number of occasions to stir oxygen into an oncoming mass of dead steam. He got very little sleep after the last of the outer fires went, and that was pretty early in the night.

Morning brought no relief. The first task normally accomplished was to put a guard on the village herd, which was penned in a hollow near the village. The depression remained full of water a little later than the surrounding country, so the "cattle" were normally safe from predators until the guards could arrive; but at the moment there simply weren't enough people in condition to guard both herd and village. They suffered several losses that morning as a result, until Nick could round up the reviving creatures by himself and herd them into the village. Then there was the problem of firewood for the next night; he had told the absolute truth to Swift in that respect. Someone had to get it. There was no choice but for the still battered Jim and Nancy to do the job together, dragging as best they could the cart on which they piled their fuel. They had never succeeded in training their cattle to pull the conveyance; the creatures stubbornly refused to budge under any sort of load.

By the second day, most of the others were on their feet if not at full efficiency, and matters were considerably easier. A consultation was held that morning, in which Nick proposed and defended vigorously the notion that they move to the viciously rough country he had crossed during his flight from the cave village. His chief point was the presence of so many spots which could only be approached from a single, narrow point, like a canyon or ridge, and could therefore be defended effectively by a small force. It was Nancy who answered the suggestion.

"I'm not sure that's a very good plan," she said. "In the first place, we don't know that any of the places you describe will still be that way when we get there." A quake lent emphasis and support to her words.

"What if they aren't?" retorted Nick. "There will always be others. I wasn't suggesting any of the specific spots I described, only the general area."

"But how is Fagin to find us? Supposing one of us does get to the cave village and get a message to him, how are we to describe the way to him? We'd have to guide him directly, which would probably interfere with his own plans—you judged, and I think rightly, that he is planning to take advantage of his ability to travel at night without fire."

Nick felt a very human surge of annoyance at this opposition, but remembered Swift in time to keep from yielding to it. He didn't want to be compared with that savage in anyone's mind, he told himself; besides, there was something to what Nancy was saying, now that he really gave his mind to it.

"What sort of place would you suggest?" he asked. "You're right about getting back in touch with Fagin, but I certainly can't think of any place which we will ever defend as easily as those canyons in the west."

"It seems to me that Fagin was right when he said it was foolish to fight Swift's people at all," returned Nancy quietly. "I was not thinking of defense; if we have to defend ourselves, we're already out of luck, I fear. What I had in mind was the sea."

"What?"

"You know. You helped map it. Off to the east there's a body of water that isn't water—at least, it doesn't dry up entirely during the daytime. I don't remember just what Fagin called it when we reported it to him . . ."

"He said he supposed it was mostly sulphuric acid, whatever that is, but he didn't know how to make sure," interjected the still crippled Dorothy.

". . . Whatever it is, it stays there, and if we're on the edge of it Fagin can't help finding us if he simply travels along its border. Probably he can travel *in* it for a distance, too, so the cave people can't track him." A hum of approving surprise greeted this notion, and after a few moments of thought Nick gestured agreement.

"All right," he said. "If no one has other ideas, we'll move to the edge of the sea; we can settle on the exact spot after we get there and have looked around. It's a year or two since we mapped the place, and I don't suppose we could trust information that old.

"The next problem is getting there. We'll have to decide how much we can take from the village here, and how we can carry it. I suppose we can start with the wood cart, but I'll bet there are places we won't be able to move it across. No matter how we figure it, there's a lot we'll have to leave behind.

"Then, finally, there's the matter of getting a message to Fagin. That we can leave until we're settled; there's no point telling him where we are before we know.

"I hope we can travel by tomorrow; in the meantime, the second question is the one to work on. Anyone who has more ideas, let's hear them at any time." They dispersed, each to the tasks of which he was capable.

Jim and Nancy were practically whole again, and were now looking after the cattle. There had been no further losses since they had been able to take over the job. Dorothy was at the wagon, with all the articles they hoped to take stacked around her, arranging and rearranging them in the vehicle. No matter how she packed them, there was more outside than in, and nearly constant discussion and even argument was going on between her and the other members of the group. Each wanted his own belongings to go, and it took a good deal of talk to convince some of them that since everything couldn't be taken the losses should be shared.

The argument was still going on, to a certain extent, when the journey started. Nick was beginning to feel a certain sympathy for Swift by that time; he had discovered that at times it was necessary for a group to have a leader, and that it was not always possible for the leader to reason his followers into the desired action. Nick had had to give his first arbitrary orders, and was troubled by the thought that half his friends must by now be comparing him with Swift. The fact that he had been obeyed should have clarified him on this point, but it didn't.

The cart was perilously overloaded, and everyone except those actually herding had to pull with all his strength. When fighting was necessary, hauling had to be stopped while weapons were snatched up and used. Actually, of course, there was not too much fighting; the average Tenebran carnivore wasn't very brainy, but most of them steered clear of such a large group. The chief exception was formed by the floaters, which were more vegetable than animal anyway. These creatures could be downed fairly safely by anyone having a spear longer than their tentacles; but even after their gas bladders were punctured they were dangerous to anyone coming within reach of the poisonous appendages. Several animals of the herd were lost when one of the monsters fell almost into it, and two of the party were painfully poisoned on the same occasion. It was some hours before they could walk unaided.

Contrary to Nick's pessimistic forecast, it proved possible to get the wagon all the way to the sea. Late in the second day of travel they reached it, after some hours of threading their way among ever larger pools of quiet, oily liquid.

They had seen such pools before, of course; they formed in hollows in their own valley toward the end of the day—hollows which were lakes of water at sunrise, but only tiny pools of oleum when the day reached its height. These were larger, filling a much bigger fraction of their beds.

The ground was different, too; vegetation was as thick as ever, but underfoot among the stems the ground was studded with quartz crystals. The cattle didn't seem to mind, but the feet of their owners were not quite so tough, and progress became decidedly difficult. Such masses of crystals did occur elsewhere, but usually in isolated patches which could be avoided.

The search for a stopping place was therefore briefer, and perhaps less careful, than it might otherwise have been. They agreed very quickly on a peninsula whose main body was a hill thirty or forty feet above the sea, joined to the mainland by a crystal-studded tombolo a dozen yards in width. Nick was not the only one of the party who was still considering the problem of physical defense; and in addition to its advantages in this respect, the peninsula was roomy enough for the herd. They guided and trundled their belongings out to sea and up the hill, and immediately settled down to the standard business of hunting for firewood. This was plentiful enough, and by dark a very satisfactory supply had been laid in. The watch fires were built, one of the herd animals slaughtered and eaten, and the group settled down for the night. It was not until the drops had appeared and the fires lighted that anyone thought to wonder what happened to the sea level during the nightly rain.

IV

Aminadabarlee fell silent, his eyes fixed on the vision screen; and nasty as the creature had been, Raeker felt sympathetic. He himself would have been at least as unsociable under similar circumstances. There was no time for pity, however, while there was still hope; too much had to be done.

"Wellenbach! What's the combination of the bathyscaphe?" he snapped. The communication watch officer reached over his shoulder.

"I'll get her for you, doctor." Raeker pushed his hand aside.

"Wait a minute. Is it a regular set at the other end? An ordinary phone, I mean, or something jury-rigged into the panels?"

"Perfectly ordinary. Why?"

"Because if it weren't and you punched its combination, those kids might open their air lock or something like that in trying to answer. If it's standard in design and appearance, the girl will be able to answer safely."

"I see. She won't have any trouble; I've seen her use the punch-combination sets here."

"All right. Call them." Raeker tried not to show the uncertainty he felt as the officer punched the buttons. It was not possible to tell yet just what had happened above Tenebra's atmosphere; *something* had evidently breached the air lock of the tender, but that might or might not have affected the bathyscaphe. If it had, the children were probably dead—though their guide might have had them in spacesuits, of course. One could hope.

Behind him, Aminadabarlee might have been a giant statue of an otter, cast in oiled gray steel. Raeker spent no time wondering at his own fate if bad news came back through the set and that statue returned to life; all his attention was concentrated on the fate of the youngsters. A dozen different speculations chased themselves through his mind in the few seconds before the screen lighted up. Then it did, and the worst of them vanished.

A human face was looking at them out of it; thin, very pale, topped by a mop of hair which looked black on the screen but which Raeker knew was red; a face covered by an expression which suggested terror just barely held under control, but—a living face. That was the important fact.

At almost the same instant a figure came hurtling through the door of the communications room and skidded to a halt beside the motionless figure of the Drommian.

"Easy! Are you all right?" Raeker didn't need the words to identify Councilor Rich. Neither did Aminadabarlee, and neither did the child in the screen. After the two-second pause for return contact, the terror vanished from the thin face, and she relaxed visibly.

"Yes, Dad. I was pretty scared for a minute, but it's all right now. Are you coming?"

For a moment there was some confusion at the set as Rich, Raeker, and the Drommian all tried to speak at once; then Aminadabarlee's physical superiority made itself felt, and he thrust his sleek head at the screen.

"Where is the other one—my son?" he shrilled.

Elise replied promptly, "He's here; he's all right."

"Let me talk to him." The girl left the pickup area for a moment, and they heard her voice but not her words as she addressed someone else. Then she reappeared, with her dark hair badly disheveled and a bleeding scratch on one cheek.

"He's in a corner, and doesn't want to come out. I'll turn up the volume so you can talk to him there." She made no reference to her injury, and, to Raeker's surprise, neither did her father. Aminadabarlee seemed not to notice it. He shifted into his own shrill language, which seemed to make sense to no one else in the room but Rich, and held forth for several minutes, pausing now and then for answers.

At first he received none; then, as he grew more persuasive, a feeble piping came back through the set. Hearing this restored the Drommian's composure, and he talked more slowly; and after a minute or so of this Aminadorneldo's head appeared beside Easy's. Raeker wondered whether he looked ashamed of himself; Drommian facial expressions were a closed book to him. Apparently one of the family had a conscience, anyway, for after a few moments' more talk from the elder one the child turned to Easy and shifted to English.

"I'm sorry I hurt you, Miss Rich. I was afraid, and thought you'd made the noise, and were trying to make me come out of the corner. My father says you are older than I, and that I am to do whatever you say until I am with him again."

The girl seemed to understand the situation. "It's all right, 'Mina, she said gently. "You didn't really hurt me. I'll take care of you, and we'll get back to your father—after a while." She glanced at the pickup as she added the last words, and Raeker grew tense again. A glance at Councilor Rich confirmed his suspicion; the girl was trying to get something across, presumably without alarming her companion. Gently but firmly Raeker took the Drommian's place in the pickup field. Easy nodded in recognition; she had met him briefly on her own tour through the *Vindemiatrix* some time earlier.

"Miss Rich," he began, "we're still a little in the dark about just what happened down there. Can you tell us? Or is your guide there, to give a report?"

She shook her head negatively at the latter question. "I don't know where Mr. Flanagan is. He stayed in the tender to have a smoke, I suppose; he told us to be sure not to touch any controls—he must think we're pretty stupid. We stayed away from the board, of course—in fact, after the first look, we stayed out of the control compartment altogether, and looked through the other rooms. They're all observation or bunkrooms, except for the galley, and we were just going to suit up to go back to the tender when a call came from Mr. Flanagan on the set he'd left tuned to suit radio frequency. He said he was at the outer lock and would open it as soon as he closed the one on the tender—the two ships were so close together we could touch them both at once when we came across—and that we were to stay absolutely still and not do a thing until he came. 'Mina had just opened his mouth to answer when the jolt came; we were flung against the wall, and I was held there by what felt like three or four G's of acceleration. 'Mina could move around all right, and tried to call Mr. Flanagan on the set, but there was no answer, and I wouldn't let him touch anything else. The acceleration lasted half a minute or so, I guess; you can tell better than we can. It stopped just before you called us."

By this time the communication room was packed with men. Several of them began to work slide rules, and Raeker, turning from the set, watched one of these until he had finished; then he asked, "Any ideas, Saki?"

"I think so," the engineer replied. "The kid's report isn't exact, of course, but judging from her estimate of acceleration and time, and the mass of the bathyscaphe, one full ring of the solid-fuel boosters was touched off somehow. That should give just over four G's for forty seconds—about a mile a second total velocity change. There's no way to tell where the ship is, though, until we get there and home on it; we can't compute, since we don't know the direction of acceleration. I wish the 'scaphe weren't so close to the planet, though."

Raeker knew better than to ask the reason for this, but Aminadabarlee didn't.

"Why?" The engineer glanced at him, then at the image of the other Drommian in the screen, and then apparently decided not to pull punches.

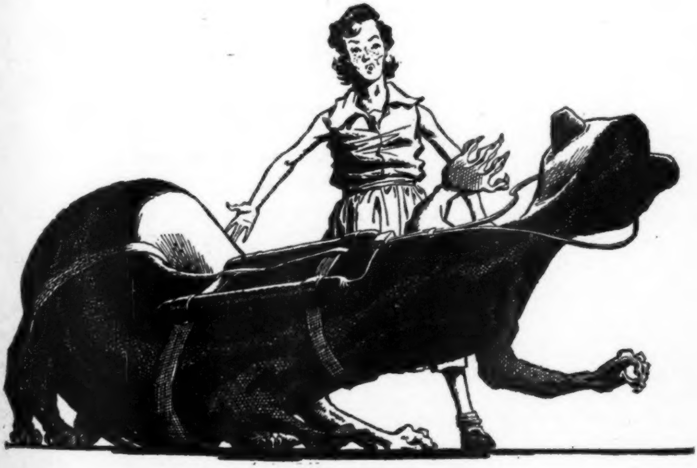
"Because a one mile a second change in any of a good many directions could put it in an orbit which would enter atmosphere," he said bluntly.

"How long to entry?" cut in Councilor Rich.

"Not my pidgeon. We'll get it computed while we're under way. My guess would be hours at the outside, though."

"Then why are we standing here talking?" shrilled Aminadabarlee. "Why aren't preparations for rescue being made?"

"They are," returned the engineer calmly. "Only one shuttle was in regular use, but there are others here. One of them is being made ready, and will leave in less than ten



minutes. Dr. Raeker, do you want to come?"

"I'd just add mass without being useful," Raeker replied.

"I suppose the same could be said for me," said Rich, "but I'd like to come if there's room. I certainly don't want to hamper the work, though."

"It will be better if you don't," admitted Sakiiro. "We'll keep in touch with this ship and the 'scaphe, though, so you'll know what's happening." He ran from the room.

Aminadabarlee had quite obviously meant to insist upon going; after Rich's words, however, he could hardly do that. He relieved his feelings by remarking, "No one but a fool human being would have had takeoff boosters attached to an uncompleted ship."

"The bathyscaphe is complete, except for final circuit checks and connections," another engineer replied calmly, "and the boosters were for landing as well as takeoff. As a matter of fact, they were not supposed to be connected until the last moment, and it will not be possible to tell what actually fired them until we salvage the ship. Until then, assigning blame is very much a waste of time." He stared coldly at the Drommian, and Rich stepped into the breach. Raeker had to admit the fellow was good at his job; it had seemed a virtual certainty that the big weasel was going to clean the human beings out of the room, but Rich had him calmed down below boiling point in four or five minutes.

Raeker would have liked to hear the details, but he was occupied with the radio. The children on the bathyscaphe had heard, without understanding completely, most of the engineers' statements; and Raeker found himself doing his best to keep up their morale. They were, perfectly reasonably, frightened half to death. It wasn't as hard as he'd thought it might be, though; he hadn't talked long before he realized that the girl was doing exactly the same thing. He couldn't decide whether it was for the benefit of her father or her nonhuman companion, but his respect for the youngster went even higher.

The rescue ship was well on the way by this time, and as the minutes clicked by the hopes of everyone on all three vessels began to mount. If the 'scaphe were in an orbit that did not touch Tenebra's atmosphere, of course, there was no danger; food and air equipment were aboard and had been operating for some time. On a straight chance basis, it seemed to Raeker that the probabilities were at least three to one that this was the case, though he was no ballistician. The computer on the rescue boat was kept busy grinding out possible orbits; the worst seemed to call for atmospheric contact within three quarters of an hour of the accident; and if this didn't occur within a little over two hours, it wouldn't.

There were viewports in the 'scaphe, and Easy was able to recognize some stars; but while this told them roughly which side of the planet she was on, the lack of precision measurements at her command made the information useless. At that time, there was only one side she *could* be on.

It was sixty-seven minutes after the accident that Easy reported acceleration. By that time, even Aminadabarlee knew all the implications of the fact. The rescue boat was "there," in the sense that it was within half a diameter of Tenebra and nearly motionless with respect to the planet—perfectly useless, as far as the trapped children were concerned. The engineers could get a fix on the 'scaphe's transmitter and locate it within a few miles; but they couldn't compute an interception orbit inside Tenebra's atmosphere. No one knew enough about the atmosphere. The certain thing was that no interception whatever could be accomplished before the 'scaphe was so low that rockets could not be used—atmospheric pressure would be too high for them. Sakiiro reported this to the *Vindemiatrix* within a minute of Easy's information; then, before Aminadabarlee could start to speak, he turned to the set which he had on the depthboat's frequency.

"Miss Rich. Please listen carefully. Your acceleration is going to get much worse over the next few minutes; I want you to strap yourself in the seat before the control panel, and do what you can about your companion."

"None of the seats fit him," the girl answered.

"His normal weight is four G's," Rich cut in from the *Vindemiatrix*.

"He'll be taking more than that; but he'll probably be able to stand it, in that case. Just tell him to lie down. Now, Miss Rich—"

"Call me Easy; it'll save time."

"Tell me what you can recognize on the board in front of you."

"Not much. Light switches are labeled over on the left. The communicators are top center; air lock controls under a guard near the light switches; about two square feet of off-on relay buttons labeled with letters, that don't mean anything to me—" she let her voice trail off, and Saki nodded.

"All right. Now, near the top of the board, to the right of the communicators, you'll see an area about six inches square marked 'hunt.' Have you found it?"

"Yes; I see it."

"Make sure the master toggle at its lower left corner says 'off.' Then put the three in the group labeled 'aero' in the 'on' position. Then make sure that the big one marked 'D.I.' is off. Do you have that?"

"Yes, sir."

"Now be sure you're strapped in. What you've been doing is tie in a homing radio which is tuned to the transmission of the robot on the ground to the aerodynamic controls of the 'scaphe. I don't dare have you use any power, but with luck the autopilot will glide you down somewhere in the general vicinity of that robot. You don't have to worry about burning up in that atmosphere; the ship is designed for a power-off entry. It's a big planet, and if we can narrow down your landing area to even a five hundred mile radius it will be a big help in picking you up. Do you understand?"

"Yes. I'm strapped in the seat, and 'Mina is lying down."

"All right. Now reach up to the 'hunt' region you've just been setting, and snap on the master switch. I hope you're not prone to motion sickness; it will be rough at first, I expect."

Sakiiro from the rescue boat and the group in the message room of the *Vindemiatrix* watched tensely as the girl's hand went up and out of the pickup field. They could not see her actually close the switch, and to the surprise of the engineers they could not detect very easily the results of the act. They had expected the girl to be jammed into her seat by an abrupt acceleration change; but things proved not nearly so bad.

"I can feel it," Easy reported. "The ship is rolling—now the planet is on our left side—and I'm a little heavier in my seat—now we're leveling out again, and 'down' is forward, if this panel is at the front of the room."

"It is," replied the engineer. "You should now be headed toward the robot, and will be slowing down until you're doing about five hundred miles an hour with respect to the air around you. The braking will be jerky; the ship had throw-away speed brakes to take it down through the heat barrier. Stay strapped in."

"All right. How long will it take?"

"A couple of hours. You can stand it all right."

Rich cut in at this point.

"Suppose the machine passes over your robot's location before getting rid of its speed, Mr. Sakiiro? What will the autopilot do? Try to dive in at that point?"

"Certainly not. This is a vehicle, not a missile. It will circle the point at a distance which doesn't demand more than an extra half-G to hold it in the turn. If necessary, it will try to land the ship; but we should be able to avoid that."

"How? You don't expect Easy to fly it, do you?"

"Not in the usual sense. However, when she's down to what we can call 'flying' speed, the main bouyancy tanks of the 'scaphe should be full of the local atmosphere. Then I'll tell her how to start the electrolyzers; that will fill them with hydrogen, and the ship should float, when they're full, at an altitude where boosters can be used. Then she and her young friend can trim the ship so that she's hanging nose up, and fire the rest of the boosters. We can be waiting overhead."

"I thought you said the boosters weren't connected to the control panel yet!"

Sakiiro was silent for a moment.

"You're right; I'd forgotten that. That complicates the problem."

"You mean my kid is marooned down there!"

"Not necessarily. It's going to call for some tight maneuvering; but I should think we could rig boosters on this boat so as to be able to reach the 'scaphe when it's floating at its highest. The whole design object, remember, was for the thing to float high enough for hydroferron boosters to work; and if they'll work on one frame, they'll certainly work on another."

"Then you can rescue her." The statement was more than half a question. Sakiiro was an honest man, but he had difficulty in making an answer. He did, however, after a moment's hesitation, staring into the face of the middle-aged man whose agonized expression showed so clearly on his screen.

"We should be able to save them both. I will not conceal from you that it will be difficult and dangerous; transferring an engineer to the outside of the 'scaphe to finish up wiring, while the whole thing is floating like a balloon, from a rocket hanging on booster blasts, will present difficulties."

"Why can't you transfer the kids to the rescue ship?"

"Because I'm pretty sure their spacesuits won't stand the pressure at the 'scaphe's floating height," replied Sakiiro. "I don't know about Drommian designs, but I do know our own."

"Mr. Sakiiro." Easy's voice cut back into the conversation.

"Yes, Easy."

"Is there anything more I can do? Just sitting here doesn't seem right, and—and it scares me a little."

Rich looked appealingly at the engineer. As a diplomat, he was an accomplished psychologist, and he knew his daughter. She was not hysterical by nature, but few twelve-year-olds had ever been put under this sort of stress. He himself was not qualified to suggest any reasonable occupation to hold her attention; but fortunately Sakiiro saw the need, too.

"There are pressure gauges to your left," he said. "If you can give us a running report on their readings, while your friend tells us when he can first detect signs of dimming in the stars, it will be of some help. Keep it up unless you get too heavy to be able to watch easily; that may not be too long."

Rich looked his thanks; if Aminadabarlee was doing the same, no one was able to detect the fact. For long minutes the silence was broken only by the voices of the children, reading off numbers and describing the stars.

Then Easy reported that the ship was banking again.

"All right," said Sakiiro. "That means you're about over the robot. From now until your speed is killed, you're going to have to take better than three and a half gravities. Your seat folds back on its springs automatically to put you in the best position to stand it, but you're not going to be comfortable. Your friend can undoubtedly take it all right, but warn him against moving around. The ship's traveling fast in an atmosphere, and going from one air current to another at a few thousand miles an hour can give quite a jolt."

"All right."

"The stars are getting hazy." It was Aminadorneldo.

"Thanks. Can you give me another pressure reading?"

The girl obliged, with detectable strain in her voice. Until the last turn had started, the 'scaphe was in relatively free fall; but with its rudimentary wings biting what little there was of the atmosphere in the effort to keep it in a turn the situation was distinctly different. Why the vehicle didn't go into a frame-shattering series of stalls, none of the engineers could see; the turn had started at a much higher speed than had been anticipated by the designers of the machine. As it happened, the whole process was almost incredibly smooth —for a while.

Sakiiro, with no really objective data to go on, had about concluded that the vessel was down to gliding speed and was going to describe the location of the electrolysis controls to Easy when the motion changed. A series of shuddering jars shook the ship. The girl's body was held in the seat by the straps, but her head and limbs flapped like those of a scarecrow in a high wind; the young Drommian for the first time failed to stay put. The jolting continued, the thuds punctuated by the girl's sobs and an almost inaudibly high-pitched whine from Aminadorneldo. The elder Drommian rose once more to his feet and looked anxiously at the screen.

The engineers were baffled; the diplomats were too terrified for their children to have had constructive ideas even had they been qualified otherwise; but Raeker thought he knew the answer.

"They're hitting raindrops!" he yelled.

He must have been right, it was decided afterward; but the information did not really help. The bathyscaphe jerked and bucked. The autopilot did its best to hold a smooth flight path, but aerodynamic controls were miserably inadequate for the task. At least twice the vessel somersaulted completely, as nearly as Raeker could tell from the way the Drommian was catapulted around the room. Sheer luck kept him out of contact with the control switches. For a time the controls were useless because their efforts were overridden—a rudder trying to force a left turn will not get far if the right wing encounters a fifty-foot sphere of water, even though the water isn't much denser than the air. Then they were useless because they lacked enough grip on the atmosphere; the ship had given up enough kinetic energy to the raindrops to fall well below its stalling speed—low as that was, in an atmosphere seven or eight hundred times as dense as Earth's at sea level. By that time, of course, the ship was falling in the oldest and simplest sense of the word. The motion was still irregular, for it was still hitting the drops; but the violence was gone, for it wasn't hitting them very hard.

The rate of fall was surprisingly small, for a three-G field. The reason was simple enough—even with the outside atmosphere filling most of its volume, the ship had a very low density. It was a two hundred foot long cigarlike shell, and the only really heavy part was the forty foot sphere in the center which held the habitable portion. It is quite possible that it would have escaped serious mechanical damage even had it landed on solid ground; and as it happened, the fall ended on liquid.

Real liquid; not the borderline stuff that made up most of Tenebra's atmosphere.

It landed upside down, but the wings had been shed like the speed brakes and its center of gravity was low enough to bring it to a more comfortable attitude. The floor finally stopped rocking, or at least the Drommian did—with the vision set fastened to the ship, the floor had always seemed motionless to the distant watchers. They saw the otterlike giant get cautiously to his feet, then walk slowly over to the girl's chair and touch her lightly on the shoulder. She stirred, and tried to sit up.

"Are you all right?" Both parents fairly shrieked the question. Aminadorneldo, his father's orders in mind, waited for Easy to answer.

"I guess so," she said after a moment. "I'm sorry I bawled, Dad; I was scared. I didn't mean to scare 'Mina, though."

"It's all right, Kid. I'm sure no one can blame you, and I don't suppose your reaction had much to do with your friend's. The main thing is that you're in one piece, and the hull's intact—I suppose you'd be dead by now if it weren't."

"That's true enough," seconded Sakiiro.

"You've had a rough ride, then, but it should be over now. Since you're there, you might take a look through the windows—you're the first nonnatives ever to do that directly. When you've seen all you can or want to, tell Mr. Sakiiro and he'll tell you how to get upstairs again. All right?"

"All right, Dad." Easy brushed a forearm across her tear-stained face, unfastened the seat straps, and finally struggled to her feet.

"Golly, when are they going to cut the power? I don't like all these G's," she remarked.

"You're stuck with them until we get you away from there," her father replied.

"I know it. I was just kidding. Hm-m-m. It seems to be night outside; I can't see a thing."

"It is, if you're anywhere near the robot," Raeker replied, "but it would not make any difference to your eyes if it were high noon. Even Altair can't push enough light for human eyes through that atmosphere. You'll have to use the lights."

"All right." The girl looked at the board where she had already located the light switches; then, to the surprised approval of the engineers, she made sure from Sakiiro that these *were* the ones she wanted. Saki admitted later that his hopes of rescuing the pair soared several hundred per cent at that moment.

With the lights on, both children went over to the windows.

"There isn't much to see," called Easy. "We seem to have splashed into a lake or ocean. It's as smooth as glass; not a ripple. I'd think it was solid if the ship weren't partly under it. There are big, foggy globes drifting down, yards and yards across, but they sort of fade out just before they touch the surface. That's every bit I can see."

"It's raining," Raeker said simply. "The lake is probably sulphuric acid, I suppose fairly dilute by this time of night, and is enough warmer than the air so the water evaporates before it strikes. There wouldn't be any waves; there's no wind. Three knots is a wild hurricane on Tenebra."

"With all that heat energy running around?" Rich was startled.

"Yes. There's nothing for it to *work* on—I use the word in its physical sense. There isn't enough change in volume when the atmosphere changes temperature, or even changes state, to create the pressure differences you need for high winds. Tenebra is about the calmest place you'll find inside any atmosphere in the galaxy."

"Does that jibe with your remarks about earthquakes a while ago?" It was a measure of Aminadabarlee's revived confidence that he could talk of something besides the stupidity of human beings.

"No, it doesn't," admitted Raeker, "and I'll have to admit, Easy, that there is a possibility that you *will* encounter some waves if you float there long enough. However, you won't be able to call them weather, and they won't carry you to any more interesting places. I'm afraid you've seen about all you can expect to, young lady; you may as well come up and be properly rescued."

"All right. Only I'd like to know just what's going to make this thing float, and whether the trip up will be as rough as the one down was."

"It won't. You'll go up vertically, and much more slowly. You're going to ride a balloon. The atmosphere there is mostly water, with enough ions loose to make it a decent conductor. The largest part of your hull is divided into cells, and each cell further divided in two by a flexible membrane. Right now, those membranes are squeezed flat against one wall of each cell by atmospheric pressure. When you start the electrolysis units, some of the water will be decomposed; the oxygen will be piped outside the hull, but the hydrogen will be released on the other side of the membranes, and gradually drive the air out of the cells. The old bathyscaphe used the same idea, only it didn't need the membranes to keep the two fluids from diffusing into each other."

"I see. How long will it take to make enough gas to lift us?"

"I can't tell; we don't know the conductivity of the atmosphere. Once you start things going, there's a bank of ammeters above the switches for each individual cell; if you'll give me their reading after things start, I'll try to calculate it for you."

"All right. Where are the . . . oh, here; you labeled them decently. Upper right, a bank of twelve toggles, with a gang bar and a master?"

"That's it. You can see the meters above them. Close the lot, hit the master, and give the readings."

"All right." The thin arm reached up and out of the field of vision, and everyone could hear the switches click. Easy pulled her hand back to her lap, settled back into the chair under her three hundred pounds of weight, eyed the dials one after another, and said, "The readings are all zero. What do I do now?"

TO BE CONTINUED

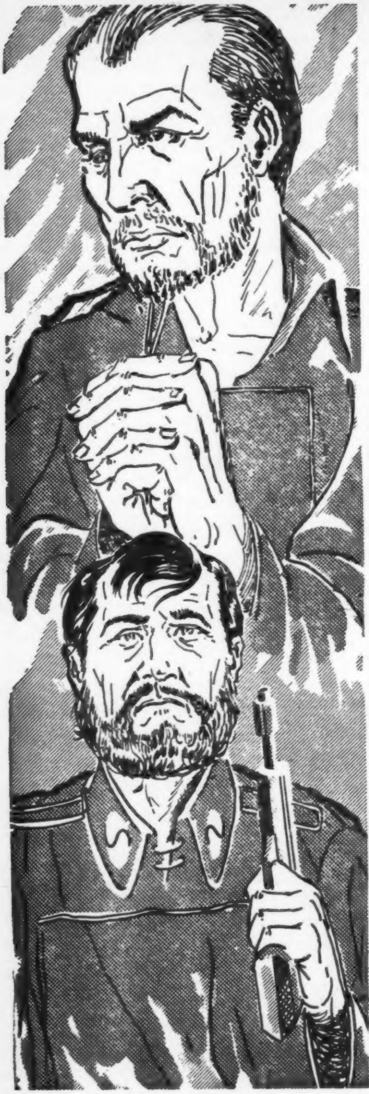
IN TIMES TO COME

The cover next time is an Ed. Emsh symbolic—"Pastoral." One of the office visitors remarked of it, "That's the cowiest looking creature that isn't a cow that I ever saw." I think Ed's made his point—and the weirdest looking of the weird creatures on that cover is the bird sitting on the fencepost. Wait till you see it! Needless to say, the pastoral scene is *not* an Earthly scene.

Shakespeare said that some are born great, some achieve greatness, and some have greatness thrust upon them. Bob Silverberg, in "Heir Reluctant," the feature novelette next month, discusses the extremely difficult problem of thrusting greatness on a great man who doesn't want it. How do you make a highly intelligent, extremely competent man do something he doesn't want to? And make him do it willingly!

Shakespeare neglected to explain how you go about thrusting greatness on an unwilling recipient!

THE EDITOR.



THE QUESTION

BY GORDON R. DICKSON

It wasn't too surprising that the aliens couldn't answer the Question. After all, we've been trying to for millennia ourselves!

Illustrated by Martinez

THE alien official entered the office of his superior with a film case under his arm.

"Well?" asked the superior.

"I'm sorry," said the official setting his film case down on what passed for a desk among those of that race. "Professionally, I have to report failure."

"Failure?" echoed the superior, coming upright suddenly behind the desk. He was a pale, smooth-skinned creature, very humanoid as far as shape went, but, of course, completely hairless and possessing one extra joint in each leg. "What kind of failure?"

"May I demonstrate?" asked the official, gesturing toward the film case.

"Of course."

The official opened his case, extracted the film and fed it into a projector built into the superior's desk.

"These films," he said, as he worked, "were made by concealed perceptors inside a human redoubt that had been especially prepared with them. The men you will see pictured on them were deliberately driven toward this refuge and the films have been edited down to relevant moments and whenever possible built up by interpretive material by our psychology department. They represent absolutely the best we can do in this direction and they demonstrate our problem."

He touched a switch. One wall of the office seemed to dissolve. The two aliens found themselves apparently looking into the interior of a concrete-walled cave. It was furnished with human-style bunks, a table and some plain metal chairs. A wrecked cupboard sagged against a far wall, and a sink next to it had its water tap dangling and apparently useless. The image shifted point of view slightly and they looked out through one of the square ports in the front wall of the redoubt onto a bouldered slope falling away down into a little gully and rising beyond into a sharp, unscalable cliff at a distance of some three hundred meters. In the bed of the gully the boulders were enormous.

"This redoubt," said the official, "was on the far west wing of the original human line of defense, on Otraca IV, where we and they had both established colonies and where we both came into contact and conflict originally. The redoubt was abandoned early, in the first human retreat. By the way, I might mention that for all practical purposes, Otraca IV is ours, the only humans left there now being such as you are about to see. The perceptors were installed and the men driven toward it for the purpose of making this particular film and answering a specific question—now you see them approaching . . ."

The point of view in the projector was suddenly stepped up by magnification. Framed on the screen there appeared four men as they emerged from among the enormous boulders of the gully and approached the small stream running down the gully at a distance of some sixty meters from the redoubt.

The men were obviously in the last stages of exhaustion. The best part of them seemed to be their clothing—jackets and trousers and boots of some nearly indestructible plastic. All of them were almost ridiculously overarmed with weapons of various kinds, all were bearded and gaunt-faced, and one—who leaned heavily on the shoulder of another—seemed wounded in the leg.

The leading man fell belly-down at the edge of the stream and began to drink from the running water in long gulps like a tired horse. He was a big man with light red, curly hair and the freckled face of a boy. The dark, bright barrel of his gun glinted in the afternoon sunlight. The other three came up and fell down at the stream alongside him. The second man to reach the water was lean and dark as a strip of meat hung and dried in the sun. He seemed too frail for the weight of the weapons he was strapped about with, but he moved with a quick nervous energy. The third and fourth were, respectively, a tall, slim blond young man and the oldest of the four, a large-boned lanky individual of middle age with thinning hair and a face prematurely cut into deep lines of character. It was this oldest and last that dragged his left leg as if it was of little use to him.

The large redhead, having been the first to reach the water and drink, was the first to raise his head. He got to his feet with the sun at his shoulder, throwing his long distorted shadow off to his right over the bouldered ground; and, shading his eyes with one hand, gazed up to the redoubt. He was still looking as, one by one, the other three rose to join him. Their voices came distantly to the ears of the perceptors in the redoubt.

"What about it?" This was the lean, youthful blond who had been helping the injured man.

"One of ours," replied the redhead. "No doubt of that. And looks empty. Could be booby-trapped, though."

They stood for a second.

"Want to try it?" asked the redhead.

"Why not?" said the lean, dark one standing beside him—and without waiting to discuss it further, he waded out into the stream toward the redoubt. The others followed him.

They approached the cave in a staggered line. The dark one led, the redhead behind him, and the remaining pair coming together, the one assisting the other as they had to the creek. The dark one came up within a dozen feet of the entrance and stopped. He waited for the redhead to come up and join him. They stood framed by the half-open door.

"What about it?" the dark one asked. The redhead shrugged, and, reaching to the holster that dragged down his belt on the right side, drew out a heavy-handled, four-hundred-shot magazine automatic. He fired and the door slammed back to the impact of the explosive slug, revealing the redoubt's abandoned interior. Dust, disturbed by the explosion and the door's action, fumed out through the entrance like light smoke.

"Good enough, Tyler?" asked the redhead, grinning down a little lopsidedly at the dark man, and reholstering his sidearm.

"It'll do," said Tyler, dryly. He went forward cautiously, however, slinging his rifle around to a ready position before him as he stepped through the entrance. The redhead turned to wait for the other two.

"Can we . . . go in?" gasped the wounded man, as he came up.

"Enoch's about done up, Win", said the other.

"It's all right," said Win, running a big hand wearily through his red mop of hair. "I could tell it when we came up. You get a feeling after a while." He stood aside and let the wounded Enoch be supported through the entrance by the blond man. They went straight for the nearest bunk and Enoch collapsed upon its dust blankets.

Bringing up the rear, Win stopped for a second before closing the door to examine the spot where the slug from his automatic had exploded against it. Only a small bright spot marked the metal at that point. Win grunted with satisfaction, closing the heavy door behind him. He turned about.

"Where's Tyler?" he asked. "Where'd he go, Paul?"

The blond answered, jerking his head in the direction of a dark entrance at the rear of the redoubt. He was bent over, straightening out Enoch's wounded leg upon the bunk.

"He went back up the rathole." He looked back down at the man on the bunk. "How's that now, Enoch?"

"Let me rest for a while," sighed Enoch. "Just let me lie still for a bit."

Win turned back to check the inner bar-locks of the door. Then he went up and down the front wall of concrete, checking the ports and the metal shutters that could be slid across them. All worked well. Finished with this, he made a tour of the redoubt's interior, sniffing as if to smell something past the damp-dustiness of it's atmosphere. He stopped at the sink and played with the broken faucet. No stream of water came forth."

He turned to the cupboard, and rummaging around in it came down with a couple of empty plastic bottles and a large five-gallon tin that had evidently by its label once contained food concentrates.

"Canteens," he said, carrying these items over to the two men at the bunk. Without a word, Paul unhooked his own canteen and gently detached the one on Enoch's belt. He handed both over to Win.

There was a scraping noise from the dark aperture and Tyler emerged back into the dim light of the redoubt.

"Canteen," said Win. Tyler took his off and came across the room to hand it over.

"Rathole's blocked," he said. "Rockfall — maybe an explosion, maybe natural. But blocked."

"I figured as much," said Win. He took his load of containers and went out the door. Tyler drifted across to one of the ports and watched the big man as he made his way down to the creek, filled with water all the motley assortments of objects he was burdened with, and brought them back. Before he returned, Win drank again.

"That's good water," he said, coming back into the redoubt and setting down his full containers on the table. He wiped his mouth as Tyler closed the door and locked it behind him. After he snicked the last bolt home, the dark man drifted across to the nearest port and took up a post there, his rifle at rest upon the thick ledge of the concrete sill.

"We can't go on," said Paul from the bunkside, "Enoch can't make it any farther the way he is."

"Sure," said Win. He sat down on one of the chairs and it squeaked to his weight.

"You can leave me," Enoch spoke from the shadow of the corner where his bunk stood. "I can go on on my own after a bit."

"I'll stay with you," said Paul.

"Be a damn fool," said Tyler, without turning his gaze from the gully beyond the open port. "Outside, we can still run. Here, we're trapped."

"I won't leave Enoch," said Paul. He turned toward Win. "How close behind us do you think they are?"

"Two hours, according to your watch," replied the redhead with his eyes half-closed. "Give or take an hour."

"I think we ought to bug out," said Tyler, without turning.

"Go if you want," said Paul, calmly.

"No," said Enoch. "I don't think—"

"Listen," said Win, speaking up suddenly. "What's the difference? We all got to rest. Maybe," he grinned, "tomorrow's our lucky day. Maybe they won't catch up with us tonight. Also maybe they're a small enough group so we can stand them off from here. They can't get at us in this place as long as we stay buttoned up."

"Artillery," said Tyler from the port.

"On that rockpile?" asked Win. "Don't make me laugh. You can hardly stand a body up straight, let alone a launcher. Also—you notice the armor on the front of this? Collapsed steel over three feet of concrete. It'd take atomics to get us out of here."

"I still don't like it," said Tyler. "If only that rathole was still open for a way out."

"So we've got one place less to watch." The redhead's voice was amused. "That's the trouble with you civilians. You're always trying to figure the situation. When you been fighting as long as I have you'll know—you can't ever figure it. You take a guess and hope for a happier deal tomorrow. That's life, buddies."

There was a momentary silence in the redoubt after he finished talking. Then Tyler spoke again, without moving, without changing the inflection of his voice.

"I'll take first watch."

"Second," said Paul.

"And Enoch's out of it," said Win. "I'll take third." He walked across to an empty bunk, unbuckling his weapon's belt as he went. Drawing the handgun from its holster, he lay down with it in his hand. He was almost instantly asleep.

Three hours later, or thereabouts, Tyler turned his head slightly from the port and said in a quiet voice—"Win!" The big man woke up instantly. He was walking across the floor toward the port, automatic in hand before his eyes were fully open. On another of the bunks, Paul, also awakened, raised himself on one elbow. Only Enoch slept on, breathing the deep ragged breaths of exhaustion. Win reached the port, being careful not to get in line with it, and glanced out over Tyler's shoulder.

"Where?" he asked.

"In the gully," said Tyler. "Coming up from downstream."

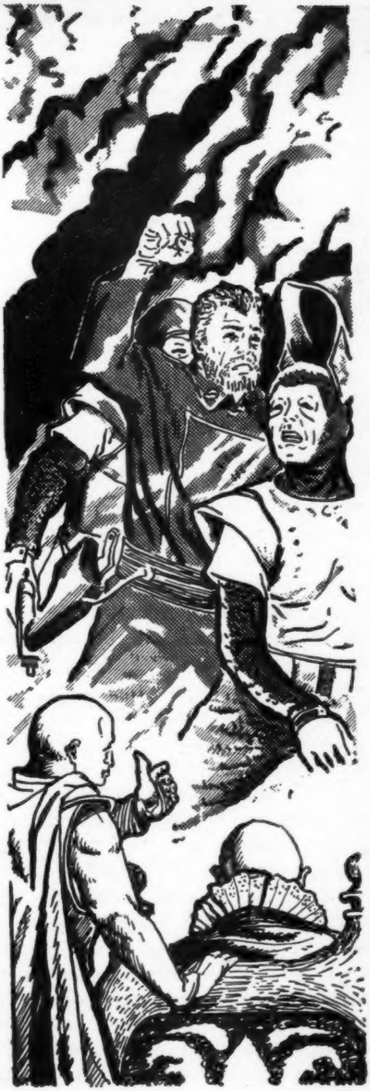
"A squad? A platoon? How many?"

"I can't tell," said Tyler. "I've marked fourteen of them—at least a platoon." He tensed a little suddenly. "See there—at one o'clock, the big black boulder with the gray streak running slantwise up and down on it."

Framed in the port a small segment of something palely white moved for a second past the gap between the boulder Tyler had pointed out and the one next to it.

"Half-armor troops," breathed Win. "They wouldn't be sending them up for a walk over those pebbles in full armor. Maybe it's only a skirmish patrol—maybe."

"Think they'll go by?" asked



Tyler. "That is, if there aren't more than a few of them."

"Depends on their officer—and whether they're actually on our trail or not."

Paul had joined them at the port. His close breath stirred the light, curling red hairs on the nape of Win's neck.

"Should we button up the ports?" he asked.

"Not yet," said Win. "Wait a bit. Wait and see."

They waited. The long shadows of afternoon lay still across the tumbled stones and seemed to creep imperceptibly with the passing minutes.

"An hour of daylight left," whispered Win. "Maybe a little less in this gully. If they don't move before dark, maybe we can sneak—"

He broke off. A figure had emerged into full view just beyond the creek. It was one of the aliens, his head helmeted and his upper body carapaced in some stiff, black material. Win hissed.

"Second-year armor. The rifles'll go through it at thirty meters and the handguns at six. That means he's safe where he is right now unless you hit him in the face. Think either of you could do it?"

Tyler lifted his rifle. Win put his hand swiftly upon it.

"I didn't mean now. We want more of them than that. And we want them closer. They'll come. It's that closed door that's making them suspicious."

The alien soldier, after standing still for several minutes, suddenly began to move. He sloshed across the creek, holding his rifle ready before him and stopped on the near side at about fifty meters distance from the redoubt.

"I could nail him now," said Tyler.

"I think I could, too," said Paul.

"Fine." Win spoke between them. "We'll still wait. Paul, you and I'll take another port apiece. And wait. Don't either of you fire until I do. I'm going to let them get right on top of us."

They waited. Slowly another alien soldier emerged from the boulders some ten meters to the right of the first. And then another came out an equal distance to the left. The first soldier had meanwhile slowly begun to plod up the rubbled slope toward the redoubt; and gradually, as he came ten more aliens showed themselves, five to a side in echelon behind him so that he was like the point of a living arrow pointed at the front door of the redoubt.

On the bunk, Enoch groaned in his sleep.

The men at the ports did not stir, standing well back at an angle and in the shadows, holding their rifles low so as to let no stray beam of sunlight reflect from barrel or sight. The aliens toiled upward in silence. It seemed to take them an exaggeratedly long time to mount the slope.

"A point of ten," murmured Win. "That means there's at least forty of them out there. At least a short platoon, maybe a full one. Pick your targets. I'll take the point man, himself, and the two on both sides of him. Lay on the right flank, Paul; on the left, Tyler. Lay dead on one man ready for my signal and then get as many more as you can."

"Quit calling them men," muttered Tyler between tight lips.

"Shut up. Lay steady. Hold your fire until I shoot. Hold it now—"

The aliens were already more than half the way to the redoubt. Still the big man waited. He was watching the point alien and in particular the rifle in the point alien's hands. The aliens came on. Suddenly, the rifle in the point's hands flashed up overhead in a signal. A harsh, high cry burst from his lips and he broke into a run.

Win squeezed the trigger of his rifle and the alien face in his sights exploded, the helmet flying high into the air like a tin can when a firecracker has been lit underneath it.

On either side, Paul and Tyler were firing steadily and methodically. The alien ten, caught in the moment in which they had started their charge forward, were checked for the moment in which it took them to reverse direction. In that moment the thousand-slug magazine rifles in the three men's hands, set on semiautomatic, did wicked damage. Six of the ten were cut down before they could turn to retreat. Three more died before they had covered half the distance back to the safety of the boulders; and the last was dropped by a pelvis shot just short of the creek. He lay thrashing on the ground. Paul raised his rifle.

Reaching over, Win knocked it out of aim.

"Save your ammunition!" he snapped. Paul looked at him for a calm moment; and then, turning back to the port laid his rifle on the ledge, waited for the moment when the wounded alien's face jerked into view, and blew it off. The last alien lay still.

"Damn you," said Tyler from the other port. "Do you think they'd be that kind to you?"

Paul shrugged.

"Shut those shutters!" roared Win. "You can talk later!"

They slammed the metal shutters home across the ports, leaving only the tiny rifle holes open. It was no more than just in time. A steady fire from the rest of the aliens hidden amongst the boulders was drumming like some giant's tattoo all along the face of the redoubt.

"Let them shoot," said Win, stepping back. "There's nothing we can do until they slack off or show themselves again."

He walked back and laid his rifle down on the table. The battle had at last wakened Enoch. He turned his gaunted face to Win.

"What happened?" he asked.

"We're pinned," said the big man. "By at least a short platoon. And that's the way that works." He reached absently for a canteen, then took his hand away from it. He turned to Tyler and Paul as the other two men came up and sat down at the table with him.

"Now what?" asked Tyler.

"Just like I said," Win drummed his big fingers on the table top. "All we can do is sit and wait—at least until dark."

"And after dark?" Paul said.

Win shrugged. He turned to the wounded man.

"How's the leg, Enoch?" he asked. "Very painful?"

"Not so painful," Enoch answered.

"Think you can move along all right on it now, if we help you?"

"I can try," said Enoch.

"No," said Paul. "I don't think he can. If you're thinking of making a break for it, after dark—"

"Leave me behind," said Enoch.

"No," said Paul. Win said nothing. Tyler said nothing. "I'll stay here with him," said Paul.

"No," it was Enoch. "You've been a good friend, Paul, but I can't take that sort of sacrifice from you. Death means nothing to me anyway. And maybe I can delay these animals outside until the rest of you get away."

"They aren't animals," said Paul, softly.

"Well, we'll see," said Win. "We'll wait until it gets dark and then have a look outside—"

He broke off suddenly. All the sound of firing outside had ceased. The abrupt silence hung heavy on the air. Win rose quickly and walked to the nearest gun port. He peered through the small rifle hole in it. Paul and Tyler went to the holes in the shutters alongside.

Outside the slope lay marked by light and shadow in the late afternoon sunlight. The strip of darkness from the far cliff face was half the distance to the creek on its other side. There was no sign of any of the alien riflemen; and then, suddenly, there stepped into view just beyond the creek a single soldier without armor or weapons. He lifted his arms briefly above his head and showed his hands, and then began stolidly to cross the creek and approach the creek and mount the slope toward the redoubt. There was the soft scraping noise of metal on concrete as the three men lifted their rifles up into position.

"What is it?" asked Tyler.

"Parley," said Win, without turning his head. The alien halted at a distance of some twenty meters from the redoubt and held up his empty hands again. He shouted to them in a high-pitched, curiously accented travesty of the human words.

"You in there! You hear me?"

None of the men answered. After a moment the alien went on.

"You listen! What is the use of more pain? We are a full company—look where I point—" He turned about suddenly and flung out his arm. As if suddenly materializing upon the field of battle, more than a hundred alien soldiers suddenly stepped up into full view and as quickly dropped back out of sight again. "You cannot escape us. We know there is no food or water in there. At last you will die. What is the use of pain? If certain death comes, will it not be better to come fast?"

He paused again, momentarily. Tyler opened his mouth as if to answer.

"Shut up!" said Win, in a tense, low voice.

"You in there!" cried the alien. "You have nowhere to go. Even if we were to let you go now, we would hunt you down at last. You are alone on this world. The end is certain. Come out now and we will shoot you quickly."

Win grunted, a low, satisfied sound. The rifle in his hands moved and fired. Outside the alien was hurled back by the force of the explosion and lay still.

"I wanted to hear him say it," said Win. "I knew that was his offer, but it didn't hurt to make sure."

"Did you have to shoot him?" said Paul.

"No, but that makes one less," said Win. "Might as well. Also, it's a better way of answering than by voice."

"The great white heart here thinks you ought to have let it live," said Tyler. Paul did not answer. He turned to Win.

"Now what?" he asked.

"Whose watch?" countered Win.

"Mine," said Paul.

"Button up all the rifle slits but one, and keep your eye sharp out of it. I don't think they'll try anything tonight—they'd rather wait until we've been worn down a bit. Don't bother watching the slope before us—watch the creek. Anything that comes has to cross the water and if the night's clear and we get the little moon, you'll be able to see them against the shine of the stream."

Paul nodded. He went down the line of shutters, sealing them up, all but one to the right of the door, where he took up his post. Win and Tyler returned to their bunks and lay down.

"Drink now?" asked Tyler, rolling over on one elbow, to stare through the thickening gloom of the redoubt in Win's direction.

"Wait until midnight," said the big man. "It'll be worse later." He rolled over on his back and closed his eyes. A second later, Tyler followed suit. Paul leaned still and watchful against his rifle hole.

The night hours slipped by. Outside there was silence. The little moon—one of the planet's two—bathed slope and stream and nearer boulders beyond the stream. There was no sound from outside and no sign of movement. Occasionally, Paul blinked his eyes and shook his head, as if to jar his attention to a fuller wakefulness.

Inside the redoubt, for a long time there was also silence, as if the three men on the bunks were all asleep and dreaming. And then an almost inaudible murmuring crept into the vacuum of sound. For a long time it rose and fell, and gradually words among it became distinguishable, and then sentences. It was the voice of Enoch.

". . . And therefore, O Lord, in this hour of our trial, alone and separate from our own people, and in the hands of our enemies, be with us in mind and body and in spirit. Strengthen our hearts with the knowledge that we are in your hands alone . . ."

There was a sudden rush and scramble in the darkness and the ugly sound of a fist striking against flesh and bone.

"You! You're not going to pray me . . ." cried Tyler's voice wildly. Paul and Win turned and flung themselves upon the dimly struggling figures rolling back and forth over Enoch's cot. It took this combined strength to pry Tyler loose from the wounded man.

"Let me go!" shouted Tyler frenziedly. "He can't put his God on me! I don't want his God . . ."

"Atheist!" cried Enoch. And Tyler, struggling against the combined grasp of the two other men, spat back at him.

"Yes, I'm an atheist. I'm a man—that's all I need. I'll show you—"

A sudden thunderous explosion sounded, echoed and re-echoed between the rock and concrete walls of the bunker. Tyler was torn from the grasp of Win and Paul, as if by a giant's hand. An alien rifle was projecting through the rifle hole through which Paul had been observing. It fired again.

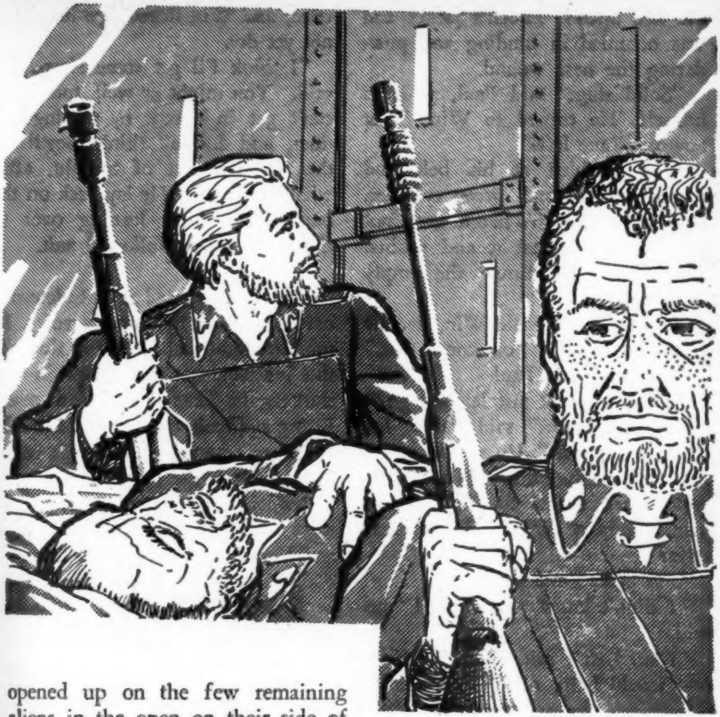
With one quick bound, Win reached the wall beside the port, and shooting out both his big hands, grabbed the barrel, jerked it inward, then thrust it back with all his strength. There was a thudding sound and the rifle dropped out of his hands and fell backward through the hole.

"I'll show you! I'll show you all!" screamed Tyler. He had snatched up his own rifle and as Paul and Win started toward him, he swung the muzzle of it menacingly toward them. A dark stain was spreading over his jacket. He jumped to the door, staggering a little, and with one hand shot the bolts back. "I'm a man!" he cried again—and jerking open the door, reeled through it out into the night.

Win leaped to the entrance behind him, slamming and shutting the door again. His face white, Paul had already jerked back one of the shutters. Both men gazed through it as Tyler yelled wildly and harshly.

An alien flare burst suddenly in the air high over the gully. Tyler was revealed in its actinic light, running, staggering down the slope, firing wildly on full automatic.

Alien guns opened up on him. The slope about him was peopled with at least a platoon of alien soldiers caught in all positions from that of crawling to full upright position, in advance upon the redoubt. Tyler swept his rifle about like a garden hose. He went down on one knee. He fell over sideways and lay still. Above, the alien flare was sinking to the ground, its light fading. From the redoubt, Win and Paul



opened up on the few remaining aliens in the open on their side of the creek.

Then it was dark again. They slammed the shutter home; and alien guns beat upon the armor of the redoubt, fading gradually into silence.

The redoubt was locked up tight. Even the rifle holes in the shutters were sealed. The two men wearily leaned their rifles against the wall and had time to turn their attention to Enoch. He lay ominously silent upon his bunk.

Paul bent over him. A little flame sparked and burst into illumination as Paul fired the lighter in his fingers.

"Unconscious," he said. "He's been hit again. That second shot, probably."

Win let out a deep sigh and dropped in a sitting position on the cot alongside.

"Leave him alone, why don't you?" he said. "He's not feeling anything now." Paul shook his head.

He had opened Enoch's jacket and was occupied in binding and powdering the new wound.

"Solid slug," said Paul, as if to himself. He turned to Win. "Got any morphine left?"

Win fumbled at his belt and passed over a small green cylinder. Paul turned Enoch's flaccid arm, put the cylinder against it and pushed the trigger. He threw the empty syringe away.

"It's no good," said Win, heavily from the couch. "You know that."

"I know," said Paul.

"Then why not just let him go?"

"I don't know," said Paul. "Instinct, I suppose." He sat down on the bunk on the other side of Enoch and looked across the unconscious man's body at Win. "Got a cigarette?"

Win passed one across.

"I didn't know you smoked," he said.

"I used to," said Paul. "I think one would help, now." He inhaled slowly, and for a moment the glow of the cigarette lit up his face. Outside the alien guns had fallen silent. "And now?"

"How's the water holding out?"

"Water?"

Both men turned instinctively to look at the table where the canteens and water containers had stood. It lay overturned by the struggle with Tyler, it's four legs poking ridiculously in the air. All the containers were scattered and spilled.

They looked back at each other. Paul very carefully put out his cigarette; and Win licked lips that were not yet dry.

"I think I'll get some sleep," he said. "You might as well, too. They can't get in except by mining the door, and I don't think they'll try that for the rest of tonight, after what happened." He lay back on the bunk. Paul, after leaning over to check on Enoch, followed suit.

They were roused at an indeterminate time later by Enoch's voice. In the little light that filtered in through the buttoned-up rifle holes in the shutters, he loomed as a dark mass, sitting suddenly upright in his bunk.

"Mary," he called in a clear voice. "Mary! Turn the lights on!"

Suddenly, he started to sag sideways, and before the two other men could reach him he had fallen over on his shoulder on the bunk. Paul bent over him, putting his fingers on the limp wrist. After a moment, he straightened up.

"He's gone," Paul said. Win peered across the bunk at him in the darkness.

"Who was Mary?" he asked.

"His wife—she was caught in the first months of the attack."

"Killed?"

"Yes," said Paul. He sat back down on his own bunk. The dimness in the redoubt was too pronounced for either man's face to show expression. In the silence Win made an odd, thoughtful little sound, as if he had just thought of something.

"Half an hour to daylight by my

watch," he said. "We'll see then."

"See what?" Paul asked.

"Well," said Win, "I'd like to put him outside. If it warms up during the day—it's going to be rough enough on us in here without water." He leaned forward a little through the darkness toward Paul. "You wouldn't mind?"

"No," said Paul.

"I didn't think so," said Win's voice, sounding quiet and almost separate from the black shadow of his body.

"You've been a professional soldier all of your life, haven't you?" Paul leaned forward slightly on his bunk.

"Since I was sixteen. My folks didn't survive the trip out."

"What happened?"

"Contamination of the drinking water. Waste from the garbage system. Everybody got sick. They were two of the ones who didn't get better."

"You're not bitter about it?" Paul said.

"Don't see why I should be. It wouldn't make any difference."

"Tell me," Paul asked, "what does make a difference?"

"Damned if I know."

"Yes." Paul's voice sounded thoughtful. "That's the thing."

"Different for you, huh?"

"There's a lot of things I'd like to find out about," said Paul, softly. "I'd even like to talk to those people outside; and see if I couldn't understand them a little better."

"For a man who shoots as well as you do," said Win, "that's a funny statement."

"I suppose so." Paul sighed. "I don't understand myself any better than I understand anything else. Wonder if any of this would make sense to all of those people back on Earth?"

"Nah," said Win. "The only one who thinks he makes sense out of something like this is the guy writing up a history on it five hundred years after—and he's wrong."

"Yes." Paul turned toward the line of shutters. "Light's picking up a bit. It must be almost dawn. Got any suggestions?"

"Clean your gun."

"I did," said Paul.

"Then, that's it."

Win got up from his bunk, crossed the redoubt and carefully cracked a rifle hole on one of the shutters. A slim needle of pale light came through and laid its sharp line across his cheek and shoulder. He opened the rifle hole wider.

"Look," he said.

Paul moved swiftly to another shutter and opened the rifle hole. Outside, halfway up the slope, a small bastion of rocks had been piled up during the dark hours; and now, as he watched, there shot into the air from behind this protection, a jet of brown liquid that spattered softly against the outside of the redoubt's locked door, to his right.

"What . . . ?" Paul said.

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"What . . . ?" Paul said.

"Jel . . ." answered Win. He brought his rifle up quickly and fired at the rockpile. Stone chips flew at the explosion of his pellet against the top of the stacked boulders. The jet paused momentarily. "Liquid explosive. If they can get enough of it piled up against the door and soaked into the crack between the door and the jamb, they can blow us open." He fired again. "Make them keep their heads down."

Paul brought his own rifle into action. The jet started up again. But its aim was bad and the brown stream angled off to one side and fell short, where it trickled greasily among the stony rubble before the redoubt. The jet stopped again. After a while new boulders began to be pushed into position on top of those already erected.

Win and Paul fired alternately, keeping up a slow but steady fire. The jet continued to work at intermittent intervals.

"They're getting it," said Win, a couple of hours later. He turned to look across the inside of the front wall at Paul, wiping his sweaty forehead with the palm of his left hand. "They're building up enough to blow us open. If we only had a grenade or two—"

"Toss out a wad of pellets with a fuse?" suggested Paul.

"We can try it," answered Win.

They drew back from the shutters and set about cutting up one of the blankets. The result was a wadded mass holding a couple of dozen rounds of their rifle's ammunition and some inflammable stuffing from one of the mattresses. A twisted wick of stuffing trailed from it.

"You open the shutter when I count *three*," said Win, hefting the ball-like contraption in one hand. "Ready? One . . . two . . . *three*!"

Paul slammed back the shutter. Win threw. The homemade bomb tumbled through the air and dropped behind the rock bastion. There was a moment's absolute silence, and then a sudden, gouting explosion from behind the bastion, that flung pieces of metal and brown stuff and alien bodies skyward.

"We did it! We did it!" cried Win. "Look at that, Paul! That stopped them—"

"You're telling me?" shouted Paul. His eyes were glittering with a new light and his mouth was newly savage. "One more like that and . . . *Look out behind you, Win!"*

They swung around together in a single movement. From the mouth of the rathole—that escape passage that Tyler had earlier found choked with fallen rock—alien soldiers were erupting. The guns in the two men's hands exploded on full automatic fire, but still the soldiers poured out. And at that same moment there was a thunderous explosion at their backs. The front door to the redoubt blew inward and twisted wide, and close behind the sound of its smashing, came more leaping, alien bodies through this new opening.

The redoubt disintegrated into a mass of swirling action revolving around two separate foci, one of which was Paul and the other Win.

Dust rose in clouds. For a second Win's face and wide shoulders could be seen in violent motion above the shorter alien heads, and then the butt of an alien rifle, appearing as if by magic from the ruck, swung full into his features, crushing them.

And the dust rose, obscuring all the screen.

The alien official shut off the desk projector. The lights in the office, which had dimmed imperceptibly as the film started, came up again.

"They were all killed, of course?" asked the superior.

"Of course," said the official. The superior tapped a little impatiently with the end of one digit on his desk top.

"Well?" he demanded.

"Well," said the official. "You see why it's failure." He looked at the superior. "You understand that while we have, for all practical purposes, cleaned them off this one world, our problem remains, and our question stays unanswered. There is no doubt, I think, that we could—if we wished to devote our entire race's energies and lives to it—manage to exterminate these humans, even on their home planet. But you understand the foolishness of such a project. We would be buying a sterile planet with the flower of our own youth."

"There's no need to labor the obvious," the superior said. "Will you come to the point?"

"I am," said the official. "We need to dominate, not eradicate races like these if we wish to expand our own culture. This test was set up to demonstrate and perhaps answer the question we must have answered if we are to advance further against this race without paying a prohibitive price for our gains. What you have just seen illustrates a basic trait of human character that baffles us. Perhaps you saw or heard something that gave you a clue. We have none."

"What trait?"

"You heard these men talk," said the official. "You perhaps noticed that they all had individual differing philosophies. We have found this true of all humans. Each, unlike us in our race, has his own personal philosophy. They all produce the same result. Each one has a different answer to our question, which leaves us with no answer at all."

"Official," said the superior, addressing the other directly by his title for the first time, "are you deliberately trying to withhold the nature of this question from me?"

"Not at all, sir," said the other. "I merely wanted you to have all the background, as I have had, before being faced with it. It is as terrible and frustrating as all simple questions. It is, merely, in the case of these humans—what is it makes them fight?"

"You mean, don't you," said the superior, at last, "what makes them keep on fighting?"

THE END

What constitutes public entertainment changes with the mores of a society. The Romans liked the Circuses...but the feline devil loose in their city might have been a bit too stimulating for them....

SPECIAL FEATURE

BY CHARLES V. DE VET

Illustrated by Wallman

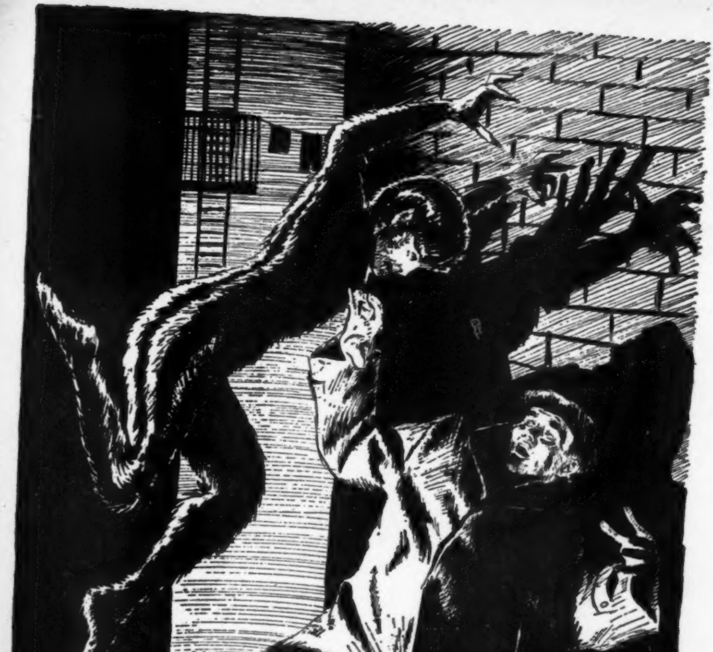
USING only the strength in her sinewy forearms Pentizel pulled herself up quietly through the hole in the ice. The small droplets of water that clung to her hairy body turned quickly to patches of shining glaze as she lay low and motionless against the hardened surface of the river.

She let her senses reach out for any indication of life above her. The bank of the river, directly ahead, was barren and deserted. In the distance she could hear the dull, muted sounds of a sleeping city. Nothing else.

She rose to her feet and treaded softly toward the river edge, warily observing everything about her. A row of semi-stripped freight cars stood on a siding to her right. To her left was an underpass. Straight ahead, tall shadow-shrouded buildings.

Among those buildings lay her danger—a danger of inarguable necessity. She must be cautious. A giant will be pulled down by a race of pigmies, unless he tempers his strength with cunning.

If she could reach the slum section of the city—the best place for a stranger to assimilate herself among the natives—without being seen, the balance would tip in her favor.



SPECIAL FEATURE

Pentizel drew from her memory the little her tapes had had about this typical Earth city in which she had landed: Name—St. Paul. Population seven hundred eighty thousand. Capital city of local subdivision—an old city.

Without distraction from her alert progress, one part of her mind assayed the city's probable place in the sociological cycle. Center of commerce shifted from river bank, to rail center, and finally out to air terminals. The old section of the city should be located somewhere on the far side of the railroad tracks.

It was a simple matter for Pentizel to slip unseen through dim back streets, from building to building, until she reached the flats of old Lactonatown.

So far strictly according to preconceived plan. Next step—to obtain clothing, and if possible, local currency.

For nearly an hour Pentizel waited in the shadow of an alley mouth, with the patience of the stalking animal she was. The twenty-two degrees below zero temperature did not trouble her; it was less cold than an average day on her own world. The frigid climate was one main reason why she had chosen this northern hemisphere.

At last Pentizel caught a sharp, salt, fragrance on the cool breeze. She heard, a few seconds later, the sound of approaching footsteps. She concentrated—with an instinctive, intricate, sensory process.

The prospective victim was a male, heavy of body, and either old, or very tired.

Her quarry reached the mouth of the alley, and Pentizel sprang.

The brief action was the same as it had been before, with the other member of this race of clods: The shocked immobility of surprise; the slowly registering alarm; the frantic futile resistance; and the small stricken cry of capitulation to superior strength at the end.

Pentizel had carefully observed pictures, and video, of Earth natives during her flight here, but she had seen only briefly a living one. She studied closely the build and features of the unconscious male as she quickly stripped him.

The body structure was much the same as her own. She had anticipated that. The features were different, but of the same basic mold. There would have to be some drastic changes made on her own face—before she could pass as one of them—but it was not an impossible task.

Leather foot casings, which Pentizel unsnapped and slipped on her own feet. Trousers—she did not bother with the undergarments, either on the feet or body—a synthetic-fur lined greatcoat, and matching head covering. These effete creatures needed a great deal of protection against the elements.

Pentizel's confidence mounted rapidly. She pulled the head covering down over the pointed tips of her ears, and the collar of the greatcoat up. When she snapped the collar close around the lower part of her face, she was satisfied. With ordinary luck she would escape discovery.

Next step—a place to rest and hide.

As rapidly as possible Pentizel put a dozen blocks between herself and her victim. An electric light blinked "RYAN HOTEL," and Pentizel went in. She had no doubt of her ability to speak the native language fluently—she and her race were particularly adept at that sort of thing, and she had used much of her time on the trip in studying tapes and practicing. She was certain she even had a fair grasp of their slang and colloquialisms.

Pentizel kept her face low in the coat collar as she walked to the hotel register desk. A sleepy-eyed clerk looked up at her and Pentizel made a motion of flailing herself with her arms. "Sure cold out," she muttered, keeping her voice in a low masculine range.

The clerk nodded and stifled a yawn with his hand. "You wanna room?"

"Yes. For two nights." Pentizel had examined the billfold in the trouser pocket and found several rectangular slips of green paper. Undoubtedly local currency. She took out one with the largest number on it—a ten—and laid it on the desk.

The clerk took the bill and made change. "Six-fifty from ten," he said, without interest. He laid three of the green slips—with ones printed on their corners—and a round silver coin on the desk. Beside them he tossed a room key. "Third door to your right," he said. "Top of the stairs."

Pentizel had surveyed the small lobby of the hotel with a fleeting first glance on entering. She moved toward the stairs now without hesitation.

Once inside her room, she locked the door, drew in a deep breath, and let it out. Her whole body relaxed with the expelled breath. A world lay within the grasp of her eager hands. A world of decadent weaklings—waiting to be ravaged!

Vern Nelson was getting a bit drowsy. Two hours before he had been unable to sleep, and had come up to the monitor station to take over the nightwatch beam. It was a public service, donated by his employers, and always an intriguing diversion for him. As he idly tilted the control handle the scene on the huge screen before him shifted across the city. It passed the Bluff section, paused for a moment at the river edge, and swung on across the old railroad yards.

A few blocks farther on Nelson spotted a small darting movement in one corner of the screen. He swung back. Nothing. Whatever it had been was now hidden beneath the overhang of a low building.

A moment later the figure slipped across the street and into the shadow of a second building. Nelson could not see him plainly enough to make any identification—he stayed too deep in the shadows—but he was able to follow his movements easily.

Another block and the figure slipped into an alley mouth, and eased himself into a crouch beside a trash barrel.

An hour went by, and Nelson was beginning to think the crouching man would never move. He was getting sleepy again.

Then it happened!

A pedestrian, in the forefront of the camera screen had been approaching the alley from the south. Nelson, watching the figure in the shadow, gave only casual attention to the approaching man. And it was not until the crouching figure made a sudden leap that he realized its intention.

The action was as swift as a shifting beam of sunlight, and the pedestrian went down without more than a brief second of struggle.

Nelson straightened in his chair. The stalker was dressed in some outlandish costume—from where Nelson sat it looked like a black and white striped fur suit.

Quickly Nelson cut the IBM machine at his elbow into synchronization with the video camera. It began its soft whirr.

"Identify!" Nelson barked.

The stalker stripped his victim and donned his clothes before he began to move away—in long graceful leaps on all fours!

Nelson pushed back his chair and stood up. A fine sprinkling of perspiration dotted his forehead. Something unusual had happened—was happening—out there. This was no ordinary assault and battery. Impatiently he punched the IBM response button.

"Insufficient data," the machine coughed.

"Stick with it," Nelson said, forgetting in his abstraction that he was speaking redundantly. Also, he shouldn't expect results yet. There wasn't much more for the IBM to tabulate than the sight of a man—or an animal—running on all fours.

In front of a cheap hotel the creature straightened and assumed the upright carriage of a man, and went in. Nelson switched to an inside-the-hotel camera and followed him as he went to the registration desk. He lost him on the first landing, but picked him up again as he entered a sleeping room. Another camera brought him inside the room.

With his attention still on the screen, Nelson pushed a button of the intercom on his desk. When a voice in the box said, "Nightwatch," he turned his head, but not his gaze. "A man's been assaulted on Eighth Street," he said. "Near Cedar, about a hundred feet from the entrance to the Y. Send a pickup for him. Don't waste time; he's been stripped of his clothing. If he's still alive, he'll freeze quickly in this weather."

"I'll have a car there in two minutes," the voice in the intercom said.

Meanwhile the man—if it was a man—in the hotel room casually pulled off his stolen greatcoat and trousers, and tossed them along with his hat on the floor. Nelson got his first good look at the man then. His body, and most of his head, was covered with the black and white striped fur. Natural fur—not a costume! His earlier suspicions had been correct then—definitely an extraterrestrial. And he had a good idea what the creature's home world was. He punched the IBM response button again.

"Strong probability person is alien," the machine intoned monotonously. "Apparent evidence indicates cat race of planet Paarae. Not conclusive however."

That was enough for Nelson. This might be the opportunity of a lifetime. If he could just swing it right. He switched on the intercom again and spoke urgently. "Get me police headquarters. Rush it."

As he waited Nelson switched the screen ahead of him to the police bureau, bringing it in just as the bored desk sergeant answered the phone.

"This is Nelson, up at the RBC monitor building," he told the sergeant. "A few minutes ago we tabbed an assault at Eighth and Cedar. We have a pickup on the way now. O.K., if we handle this ourselves?"

The sergeant shrugged. "Why not? You spotted him. You still got the hood covered?"

"Yes. But we'd like permission to assume jurisdiction."

The sergeant looked up, but Nelson knew he did not see him; the big screen was one-way. "You accept complete responsibility?"

"Complete. Thanks. I'll remember this." Nelson cut the contact before the sergeant could hedge.

Now to move with speed—and adroitness. As he turned to the intercom again the IBM said, "Preliminary evidence verified." He had forgotten to shut off the machine. He did so now.

It took him six minutes to contact Major Gower. He had been sleeping, naturally. Nelson knew he had to get his point across fast and well—or his big chance would be fumbled away. "Sorry to wake you, major," he said, and went quickly ahead. "I think I spotted a cat man here in the city, sir."

"A cat man?" The major was still not fully awake.

"Yes, sir. From the planet Paarae. This is an illegal entry. They're a treacherous race—killers—and barred from all the Human worlds. I've already recorded him committing assault. Don't know yet whether his victim is dead or not. I've sent out a pickup."

He had all Gower's attention now. "You're keeping him covered, of course," Gower said. He reached for his trousers on the chair at the side of his bed.

"Yes, sir. He's holed up in a cheap hotel on Robert Street." Now to make his own play. "This could be a mighty big thing for us, major. But we'll have to go into high gear if we want to get the full play on it. Do I have your permission to push things along?"

Gower brushed one hand impatiently through the air. "You're in charge," he stated. "What have you done so far? Call the police yet?"

Nelson nodded. "That's about all though. With your go-ahead I'll put on the express at this end. I'd suggest that sponsors be contacted without delay. Every minute will be precious. This could be the hottest live feature we've ever had the luck to stumble across. The contract men should be able to get a sponsor's right arm for an exclusive."

"I'll handle it personally," the major said. Nelson had to admire the sharpness of the man's mind. He had grasped the complete picture, from just the few sentences they had exchanged. "You go ahead with the coverage," the major added. "Give it the works; I'll back you all the way."

He had it! Now to move in big-time style. Nelson paused and wiped the moist palms of his hands down the sides of his shirt. For just a passing moment his mind was blank. Was he big enough for the job? There were a hundred loose ends to be tied together. Where to begin? The uncertainty passed. He was in full command of himself, and of the situation.

He leaned over and spoke into the intercom. "You get all that, Benny? I left the line open so you could listen in."

"I got it," Benny answered. "Who do you want me to get ahold of first?"

"Everybody. Connect me with the heads of all departments. Open line." Nelson spoke rapidly, ecstatically. This was playing the game. "I want you to get them on standby in fifteen minutes time. If you're unable to contact any of the top men, get their seconds in charge, but have someone from every last department. Got it?"

"I'll try," Benny said dubiously.

"Don't try, do it!" Nelson cut him off. While he waited he made a direct call to the Nightwatch crew. "You bring in that assault victim yet?"

"He's in the first-aid room in the basement now."

"Is he still alive?"

"Yes. Seems to be in pretty good shape. Except he's over being scared now, and starting to act indignant."

"Settle with him. Promise to replace his clothes with the best suit and storm coat in St. Paul. And give him whatever you have to for 'pain and suffering.' Try to hold it down to a thousand or two—but get his signed release before you let him out of the building."

"Will do."

Nelson paced the room impatiently, until summoned back to his desk by a call on the intercom. He glanced at his wrist watch. Seventeen minutes. Not half bad.

"Got them all—on direct wire," Benny said. "Holmgren of Personnel was out, but . . ."

"Never mind that," Nelson cut him off impatiently. He took a deep breath. "All you men, listen," he said. "The major has put me in charge on this thing. We don't have time for discussion. I'll give you the situation, and the necessary details, of what's happened so far. You note whatever applies to your own department. When I finish, I want you to move, and move with top speed. If you do, we've got the world by the tail; if you don't, we've got nothing.

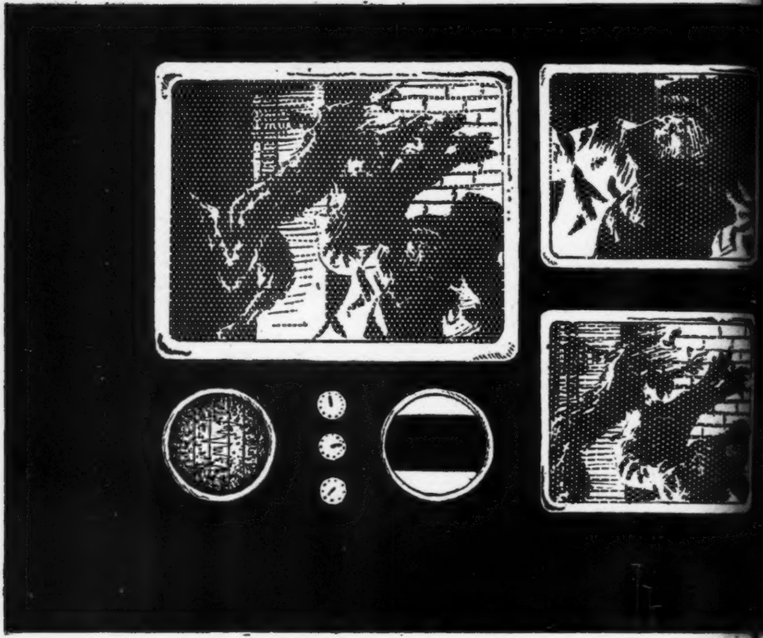
"Now here it is: About an hour ago we spotted a cat man from the planet Paarae attacking a pedestrian on Eighth, near Cedar. If you're not up on your planetology, the cat men are killers. Barred from all the Human worlds, and most of the non-Human. I've got clearance from the police for an exclusive handling. We're going to follow that cat—every single move he makes. Follow him when he eats, and when he sleeps, and even when he's just breathing. Have your staffs collect all the background material they can find. Fill in with that background whenever it looks like the program's beginning to drag a little. But keep it exciting. If that cat has the venom in his soul I think he has, we won't have to fake much."

Nelson took time out to light a cigarette and pull in a deep drag. "I want you to locate his spaceship." He let the smoke billow out with his words. "It has to be hidden somewhere near the Mississsippi. Then when you find how he came in, and where he hid his ship, make a mock-up. Use the enlarged-model technique, but make it look real. I know the critics will pan our pretending to have spotted him coming in, but who reads the critics? And the man in the lounge chair will eat it up. Carry on with shots of the cat leaving the ship—distant shots of a man in a black and white striped fur suit will cover that—and going up to the mouth of the alley on Eighth, between Cedar and Wabasha. You can cut in there with the film I have of the real thing. Right now the cat's sleeping in a cheap hotel down on Robert Street. We can close in the time easily enough to make it a continuous run.

"Now I want a top grade build-up on this. Play up strong the potentiality of violence: Assault, murder, blood. Make it good. Start cutting in immediately—on whatever program's running on the channel now—with tantalizers. Don't tell them exactly what the feature will be. Let them use their imagination. Build up their curiosity, and impatience, for the start of the biggest—live—thrill show in the annals of video. Make 'em wait for it on the edges of their seats, then make 'em watch that cat man with their hearts in their mouths. Make them cringe even when he turns over in his sleep.

"Oh yes. This denizen of Paarae is a mighty sharp individual. Don't you, or any of your men, go anywhere near him. And warn the other services that we'll sue them to within an inch of their lives if they spoil this by messing around. Black out the St. Paul-Minneapolis area for a hundred miles around. No, better make it two hundred. We don't want the curious yokels flocking in here. Cancel all scheduled programs for an indefinite period.

"That should do it. If there's anything else you need to know, call me back personally. But be sure it's necessary, because I won't have a minute



to spare doing your thinking for you."

Nelson switched off the intercom and sat back in his chair. His undershirt was soaked with perspiration.

He had ten minutes to get his breath back before the intercom came alive again. "Skipper? You still there?"

Nelson bent forward. "Go ahead."

"This is Nightwatch. That assault vitcim's name is John Bowman. We got him to settle for five hundred. O.K.?"

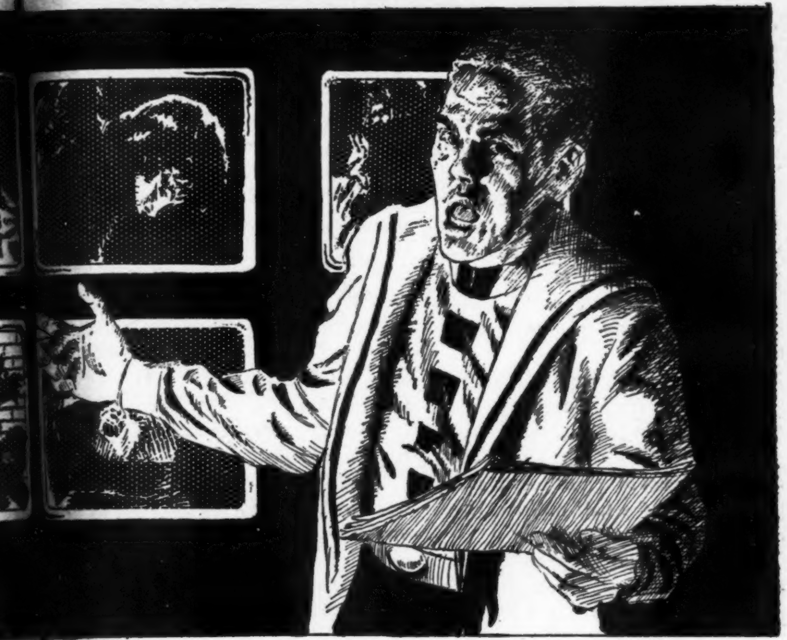
"Fine. You get his signed release?"

"Got it right here in my hand."

"Good work."

Nelson put his head on his arms and stretched forward on his desk. The tension was beginning to ease, and he felt the first letdown. His buzzer sounded just before he dropped off to sleep. "Yeah?" he said.

"Survey," the voice in the box came in. "We're handling the search for the cat's ship. We located an unaccounted-for something or other buzzing on the bottom of the Missis-



sippi, about a block east of Lambert's Landing. There's a fresh break in the ice just above. That must be it. Do you want us to send a diver down to make sure?"

"We haven't time," Nelson said. "We'll have to take the chance." He switched to Composition.

"The ship has been located in the river, near Lambert's Landing," he said. "Make your mock-up showing it coming in, plunging through the ice, and the cat man coming out of the hole a few minutes later. Got that?"

"Got it. We've already made a 'fake' of his progress from the post office to the Y. We'll do the ship landing scene and tack it on in front. Anything else?"

"That should do it."

"Don't hang up," Benny's voice caught him. "The major's waiting to speak to you."

"Yes, sir?" Nelson asked.

"We've got General Motors & Transportation signed on for sponsor, Vern," Major Gower's voice said crisply. "I practically held them up. So you better come through now."

"I'm sure we will, sir," Nelson answered. "How high did they go?"

"A million and a half."

"A million and a half?" Nelson's voice held a hint of disappointment.

"With codicils," the major added. "I took your advice, and shot for the works on this. Demanded five million. A million and a half was as high as they'd go for a pig in a poke. So I insisted on retaining rerun rights. If you know what you're doing, we can make a fortune on them."

"Did they buy that?"

"Not quite. They're no fools. They made me insert an auxiliary clause giving them the privilege of claiming rerun rights in return for an additional three and a half million. How does that sound to you?"

"Great. If it turns out only mediocre, a million and a half is a fair price. If it goes over as I think it will. . . . Well, five million is a lot of money."

"That's about the way I figured it, too," Gower said. "Oh yes, Lloyd's of Minneapolis agreed to handle liability insurance for a hundred thousand. So you can give it the works. We're in the clear on any suits for damage, that victims of the cat man might bring."

Nelson switched in to a closed-circuit of the current video broadcast.

An announcer, with built-in dramatics in his voice, was saying, "Stay close to your sets, ladies and gentlemen. Sometime within the next hour there will be shown on this screen the greatest, most sensational feature it has ever been the privilege of this network to offer. The broadcast will be live. LIVE! But let me give you this urgent caution: Please—please—do not permit your children to view this program. It is strictly, FOR ADULTS ONLY. As for you ladies, please use the greatest discretion. If you can take violence; if you can face RAW, NAKED SAVAGERY, then it's safe for you to watch. If not, our advice is to leave this to the less fragile sex. But let me repeat: this is strictly, FOR ADULTS ONLY. And it is LIVE. See it while it happens! Please stand by for further information."

Nelson smiled. That "adults only" was good. And as for the women—they'd be glued to their seats. He contacted Production.

"Set the beginning time for the special feature for"—he glanced at his watch — "nine-thirty; that's twenty-five minutes from now. Continue giving spot announcements at five-minute intervals. Now put me on with whomever has charge in the cutting room."

Nelson waited a moment until he heard the click of the relay switch and began again. "Nelson speaking," he said. "We go on the air at nine-thirty. Cut that alley wait to four or five minutes. We want to get into the excitement fast. Also, we have to do some closing on the time we've lost so far, and that's a good place to do some of it. We'll close up the rest when we come to the cat sleeping in the hotel room. Give a splash of background immediately following the assault scene, but keep it brief. And make it as good as possible. Leave about an hour's lag between filming and showing: there might be some parts along the way that just can't be allowed over the air. Got all that?"

"Right," Production cut in. "We've already made that preliminary background run. We think it's good."

"I'll depend on that," Nelson said.

The assault scene went over as big as Nelson had hoped. The speed, and sheer explosiveness of the attack, made even him gasp, and he, of course, had seen it before.

While the cat slept, the program switched smoothly to his home world. The camera focused in on a dim star, brought it up close and gave the illusion of landing on the frigid ice-bound planet. Brief shots were shown of the cat people living in their caves. Native fauna, especially the savage, semi-intelligent, bear tribe that waged a continual war against the cats, was shown with some good action bits.

Several scenes were run of ships of Earth and her colonies landing, and their crews meeting with the cat people. One scene caught an attack by the treacherous felines.

"How this cat man managed to leave his planet is not yet known," a commentator with the dignified mien of a college prof was saying. "His home world is rich in rare mineral deposits. It is hazarded that some unfortunate miner, poaching on the planet, in direct violation of Federation law, was killed by the cat man, and his ship taken. The ships are almost fully automatic, and the cats are an exceptionally adaptable race. They readily acquire the ability to operate quite complicated mechanisms, after only brief instructions or inspection. We have not yet determined whether or not this is an Earth vessel, however . . ."

The scene switched suddenly to the hotel room on Robert Street. The cat was stirring . . .

Pentizel awoke with a savage, stomach-tearing hunger. She had had nothing to eat during her nine-day trip through space except the canned food stocked by the Human she had killed, and her digestive system had been just barely able to assimilate it. She ate only enough to sustain her life. Even of the canned food, she had eaten her last meal sixteen hours before. Now she was mean and sick with the pain of her fierce hunger. She had to have meat, red meat, red bloody meat.

She knew she was being foolhardy —she should at least make what effort she could to change her features to more resemble a Human's before venturing out—but her hunger, which by now was an all-consuming need, drove her to incautious activity. Viciously pulling on the clothing she had robbed she left the room.

Outside she found herself in the midst of a heavy snowstorm. She gave a soft yarr of satisfaction. The snow should give her the protection she needed; more, the attention of the passersby was concentrated in their efforts to evade the rigors of the storm.

Pentizel walked with her collar up around her face for several blocks. Each time she met a hurrying Human she had to restrain a snarl of hunger in her throat. Several times she felt her lips draw tightly apart, and she fought for restraint. Even a full view of her fanged teeth would give her away.

She had to find a victim at a spot where she could attack unseen, and dispose of the remains after she'd eaten. Her reason had just enough control over her brute appetite to understand that the gnawed remains of a Human body must not be left where it would be found. Up to now no one was aware of her presence on this world; she had to do her utmost to keep it that way.

A mongrel pup, drifting with the wind, ran between Pentizel's legs, nearly tripping her. She restrained her spit of annoyance as a new thought took possession. The remains of this smaller body would be simpler to dispose of than that of a Human. She turned and followed the young dog until it turned into a large parking lot.

"That poor mongrel," Nelson breathed, and shuddered slightly. He watched the screen in half-nauseated fascination as the cat man tore apart the body of the unfortunate dog. He was crouched low, between two automobiles parked on the lot. As he bolted his food his mouth and claws were soon smeared with frozen blood. Finishing his meal quickly, he buried the remains of the slain dog in a bank of snow at the edge of the parking space.

The cat man returned to his hotel and curled up on his bed, and dropped instantly to sleep. The dignified announcer took his place on the screen and began urbanely. "You will note that the cat gulped its food. Because of its long canine fangs, which overlap the lower teeth in such a way as to prevent its moving its jaw freely forward and sideways, it is unable to chew, as we do. However, this overlapping allows the special teeth to sharpen themselves as they are employed, and thus the cat man is always equipped with dangerous knifelike weapons. Races so equipped are always meat-eaters.

"We Humans may take some satisfaction from this observation, for we have a definite advantage over them. Man, being omnivorous, ready and able to eat anything digestible, has a higher survival potential."

Pretty good impromptu stuff, Nelson noted mentally. His attention was diverted to the clicking intercom. "Nelson here," he said into it.

"This is Hesse, of *Review*," the voice in the box said anxiously. "I've been wondering. Just how much can we get by with here? We cut in with the commentator because the cat—" There was a brief hesitation. "Well, he's an animal, you know, and there are certain necessary functions . . ."

"I got you," Nelson said. "I'll

check with the Mayes office and call you back."

He rumpled through the directory on his desk and got the number of the Screen and Video Censor. He dredged his memory and brought up a face, and the name, Fred Matthews.

"Hello, Fred," he said jovially to the man whose face appeared on his desk screen a minute after his call.

"Hello," Matthews answered doubtfully. "Nelson, isn't it? Over at RBC?"

"That's right, Fred." Nelson kept his jovial smile. "You been getting our special feature?"

"I've been getting it," Matthews answered noncommittally.

"I have a question, Fred. That's not a Human we're covering, you understand; he's hardly even humanoid. More of an animal, wouldn't you say?" When there was no response, Nelson went on. "Being he's just an animal, it probably won't be necessary to be as finicky as . . ."

He stopped. Matthews was shaking his head, very positively. "The answer is no."

"But Fred . . ."

"You're not getting any permission from me to violate the code," Matthews said. "Personally I'd bar some of that blood you've been splashing on the screen this afternoon. Unfortunately however, that's not my province. You're within the rules. But don't try what you have in mind now."

Nelson hung up with an inaudible, muttered, "Pussyfoot." He switched back to *Review*. "The lavatory stuff is out," he said.

Early the next morning Pentizel rose and made preparations she knew she should have made earlier. Seating herself uncomfortably on the chair in front of the room's mirror, she picked up the electric shaver from the toilet articles on the stand and experimented with it until she understood how it functioned. With it then she trimmed the hair from along her jowls and the sides of her head. She shaved back the peak of white hair on her forehead, and as much as she could reach on her neck. When she finished she was pleasantly surprised. Her features would not pass a close inspection, but to the casual observer they looked quite Human.

When she went out the second time she left her face exposed, but kept the collar of her coat up around the back of her neck.

The storm outside still held strong.

For several hours she wandered through Lactonatown, pausing now and then to read the signs on places of business. She did not find what she sought.

She would have to take a necessary risk. She walked for another hour before she spied a likely prospect: A bum huddling out of the storm in the entranceway of a vacant building. She went up to him and mumbled a few sentences, displaying the last of her money, which she held in her hand. The bum kept shaking his head stupidly.

She had more luck with the second

man she chose. He led her several blocks through the slum section to an old rambler-style house, badly in need of paint. When he took her money and shuffled away Pentizel walked back and forth in front of the house for several minutes. At last she decided to wait until evening. That would be a safer time.

Nelson awoke from the nap he had been taking on the studio couch to hear the commentator say, ". . . Us like a sixth sense. It is not. The cat people have only the same five senses we have. However, they do possess highly developed instincts. Students of the race suspect, furthermore, that they have a closer affinity with their subconscious. At any rate, some part of their brain, conscious or otherwise, seems to take in every sight, every sound and movement around them, and to swiftly evaluate and classify their observations and arrive at logical conclusions. It might be said—if you'll pardon my being a bit pedantic—that you have a singular, innate, ability to reconstruct, from small fragments of fact, much of the whole of which those fragments are a part."

Nelson grunted with red-eyed dissatisfaction. Pedantic was right. He reached for the intercom, but the scene on the screen shifted back to the cat man. He was walking in front of—and studying with great interest—a beaten-down old house. After a few minutes he walked on.

The camera switched in for a close-up. Above the window on the left hand side of the house hung a sign with the printed letters:

R. L. Groggins, M. D.
BEAUTICIAN &
PLASTIC SURGEON

The clues clicked into place in Nelson's mind. The cat had been trying to change himself to look more like a Human. Now . . . Nelson looked up at the screen. The cat was still walking back toward his hotel.

He bent toward the intercom. "Benny," he called. "Get a man from Equipment down to the house of a Dr. Groggins, on College Avenue, probably about the eleven hundred block. He's a facial surgeon. Have our man use some excuse to get into the house. He can pretend he's a meter reader, or anything else that will do the trick. Someway he has to get into the doctor's operating room and put a bulb with a concealed camera and mike in a light socket there. It shouldn't be too hard. The doc won't be suspicious. But have him hump it down there."

Pentizel returned to the doctor's house late at night, when the streets were deserted. She circled the place several times, listening at doors and windows, until she was satisfied there was only one person inside.

The street was still deserted as she walked to the front porch and leaned a knuckle against the button of the door bell.

She waited several minutes, until she became nervous and edgy, before she received a response.

"What do you want?" The face of an old man peered out over the night chain through the small opening he had made in the doorway.

Pentizel threw her weight violently forward. The chain held for a brief moment, then pulled free from the wood with a dull twang, and Pentizel's thrust carried her inside.

The doctor had been hurled back by the rampant power behind the opening door. He bounced from the post at the bottom of a short flight of stairs, and slumped against the hallway wall. Blood ran from a broken nose.

Pentizel circled his throat with one hooked hand, letting only the points of her claws sink into the flesh, but effectively shutting off his breath. She waited a moment, until the doctor began to struggle, and let him jerk about loosely for just a moment. Then she wrapped her free arm around his back and crushed him close. Savagely enough to show him the futility of further struggle.

After a minute she carried the limp body of the old doctor into an inner room and dropped him ungently on a table top that still held soiled dishes from the evening meal. He was barely conscious.

The doctor stared up at her with eyes that were filled with stark terror. He squirmed slightly. A dirty plate fell to the floor with a crash and the doctor shuddered and lay still.

Slowly, menacingly, Pentizel stretched out one hand and held it a few inches from the doctor's face. She let her claws ease out of their sheaths. "I can kill you with one stroke of these," she snarled. "Remember that."

She explained tersely what she wanted, and for the next three hours kept the old surgeon walking a thin line: Keeping him so frightened for his life that he obeyed her commands without question—and attempted no foolishness with his medical tools—yet not so terrorized that he could not perform his task effectively.

Twice during the operations Pentizel allowed the old man to rest, and to drink from a bottle which he kept in a cabinet. It seemed to quiet his nerves. But she refused him more than one drink each time.

She had told him to do everything he could to make her resemble an Earth woman, and he began by trimming the hair on her head, and cutting short the claw nails on her fingers.

Next he clipped the pointed tips from Pentizel's ears, and covered the raw wounds with plasti-flesh. She refused anaesthetics. They were too much of an unknown quality to her. However, when he began to grind down her long fangs, the pain became excruciating, and she allowed him to shoot novacain into her gums. The doctor finished his grinding, and capped both teeth, without her feeling any further pain.

Pentizel submitted to the doctor's knife and drill with less reluctance to bearing the pain than to the thought that they would ruin her racial conception of beauty. It would be six months before her ears regrew their beautiful tips, and years more before her teeth were as long again.

Finally Pentizel stripped and allowed the doctor to shave the hair from her body.

"That cat's a female!" Nelson almost shouted. The strain of the long drag, and the days and nights with only snatches of sleep had begun to take their toll. His nerves were tight as drawn wires, and he had taken to talking to himself.

When he observed the shaved body of the alien female on the operating table his first thought was of the censor. He was glad now that permission had been refused earlier for showing the more indelicate activities of the cat. Knowing that she was female would have made those shots more blatant in restrospect.

He spent an uneasy five minutes waiting for a call from the censor on the exposure of her naked body, but he had his arguments ready. While vulgarity, and lewdness, were strictly against the code, exposure in itself was not. The criterium, as stated explicitly, was that the exposure be "implicit to the story," and not inserted for carnal purposes. There could be no argument about it being "implicit to the story" in a live broadcast such as this—with nothing planned—except by the cat woman herself.

The censor did not call.

Nelson continued to follow the activities of the doctor and the alien woman with absorbed attention. This scene would make good showing; as engrossing as any of the earlier running.

The cat's face would readily pass as a Human's, he decided—there was even a certain beauty there—but her body would not. It was too much an instrument of sinew and muscle. For a time he wondered why he had not suspected, before, that she was female. However, there was no way he could have guessed. Her most unEarthly features were her breasts. They ran in double rows of three down either side of her stomach. They were too small to have shown through the fur. Very probably they expanded considerably when she was childbearing.

The doctor walked to a sofa at one end of the room, after his work had been completed, and sat with his head in his hands. This had been at least as much of an ordeal for him as it had for the cat woman.

Suddenly Nelson jerked erect in his desk chair. Without warning the cat had swerved in her striding. She knocked the old doctor from his seat and throttled him, squeezing her hands around his throat until his laboring body weakened, and grew still.

It was over in a minute. The cat woman left by a rear door, making certain first that she was unobserved. She returned to her hotel and lay on her bed, dropping off into fitful slumber occasionally, but most of the time stirring restlessly. Often she snarled in her sleep. She scratched the exposed, itching, skin of her body almost continuously. Sweat soon formed a thin glistening film over her twitching muscles.

"And so the cat returns to her den to lick her wounds," the commentator said.

The night after her operation Pentizel still suffered, but a growing hunger edged aside her lesser discomfort, and at last drove her from her room. Her appetitite, however, was not so great as to make her lose her caution. She waylaid two unwary pedestrians before she had the money she decided she needed. Afterward she bought a complete female outfit, and a large package of meat, at a late closing department store, and rented a room in a different hotel. She ate sparingly that night, and not very satisfactorily. Her teeth still pained her excruciatingly, and she had no liking for meat that was not dripping fresh.

She slept all during the following day. By evening her resilient organism had rebred much of its intense vitality. And with the vitality came her renewed hunger!

She waited in a barely restrained frenzy for the full darkness of night. Her new face gave her confidence she had not had before, but her hot-blooded caution was still dominant.

As she restlessly prowled her room Pentizel found a small bottle, a fourth filled with brown liquid, in the room's wastebasket. Her gnawing stomach prompted her to drink. She swallowed a tentative mouthful. It burned her throat harshly, but after a minute brought a strange warmth to her body. She tried a second drink with less reluctance. This seemed to intensify the warmth into a flow of excitement. She drained the bottle.

All her sly reason abandoned Pentizel. She went outside the hotel and sprang at the first pedestrian she met. She pulled him to the sidewalk and buried her nails in his neck. But her claws had been blunted, and as the man beneath her struggled, Pentizel's fingers slipped in the shallow flood of blood. Her victim jerked his head free and yelled for help, with an incredulous horror in his voice.

Pentizel lunged for his neck with her fangs, but they, too, had been stunted. Furiously she spun the sobbing man around and climbed on his back. Putting both hands under his chin she twisted his head around until his neck abruptly snapped.

Only then did she look up. Shouting pedestrians were running toward her from three directions. Pentizel's animal instincts came to her rescue, and she leaped into the street, knocking aside those who tried to block her way.

She soon outdistanced her pursuers, but others heard their cries and began shouting as she passed. It was not until Pentizel reached Lactonatown again that she was able to lose herself. She ran through back streets and alleys, with her breath rasping in her throat, until she came to a large warehouse. She could find no way to enter, but found a board loose on the enclosed truck landing in front of the building and crawled inside.

No one observed Pentizel go into her hiding place, and soon she knew she was safe. As her agitation subsided the liquor began to take over again, and this time it made her drowsy. She curled up on the dirt where she lay and slept.

She awoke, hours later, with all her faculties sharply alert. Her first thought was that the rampant hunger pulling at her vitals had awakened her. However, as she lay without moving, she heard the sound of a small movement directly ahead. To her nostrils came a waft of scent—heavy, rancid, and sweet. Her eyes slit gently open. A small gray form moved cautiously across her vision.

In one swift motion she uncoiled herself, clutched the small animal, and killed it. Pentizel ate the rat with great gusto. After that she waited patiently until she had captured and eaten two more.

Vern Nelson swore softly. "If only I could have had a camera under that truck landing," he reviled himself. "There was blood on her hands and dress when she came out. Probably killed a rat." In his mind he pictured the sight of this beautiful woman—in outward appearance like any Earth woman—kneeling in the dirt, ravenously tearing apart a rat with her teeth. It would have made a great scene. But there was nothing he could do about it now.

Nelson's attention was soon taken with matters that required his more immediate concentration. It started with the commissioner of police on the vid-phone.

"We're canceling your exclusive on that cat woman," the commissioner said without preamble.

"But why?" Nelson assumed an innocent expression, though he knew what the answer would be. Even though the broadcast was blacked out in the St. Paul area, the police would be keeping in touch, through connections outside, and probably had full details.

"That killing of the salesman outside the Emporium was too much," the commissioner said caustically. "As you are well aware. The old facial surgeon was an exfelon, with demerits a yard long—and with no relatives to complain. We let that pass. But when you allow a reputable citizen to be killed it has to stop."

"Can't you give us a few days to close it out?"

"I can't take the risk of more killing. I'm getting heat myself."

Nelson tried a new tact. "We have a contract," he said. "It's verbal, but legal."

"I'm canceling it—as of right now. *Domain Populi.* We're going to get that cat woman."

"Hold off just fifteen minutes, will you?" Nelson begged. "I'll call you back." He switched off before the commissioner could refuse.

"Get me the major, Benny," he said into the intercom. That was his only hope. If the commissioner could be stalled, the major could do it. He'd find out now just how big trade Gower made in this town.

Nelson explained the situation to the major and left the matter in his hands.

Major Gower called with a twelve-hour reprieve twenty minutes later. An hour after that he paid a visit to Nelson's office. "You've done some mighty nice work with that special feature of ours, Vern," he said, easing himself gracefully into a visitor's chair. "We've topped all previous ratings—on any network."

"Thank you, sir," Nelson answered cautiously. He straightened the papers on his desk while he waited. This was more than a casual visit. The major had something on his mind. "I've been following those ratings with great interest myself," he said, when the major, instead of continuing, lit a cigar.

"What are your plans now?" Gower asked.

"Well, at this minute we're bringing the cat woman's ship up from the bottom of the Mississippi," Nelson said. "The program's dragging a bit, with her skulking down by the river. I thought shots of the ship being raised would furnish some welcome diversion. And the ship will make good advertising display for the reruns. There's certain to be a big demand for them. If GM buys the rerun rights, you might offer them the ship as a good-will gesture."

"That's headwork," the major complimented. "But you realize that this will be all over by eight o'clock

tonight. Twelve hours was the best I could browbeat out of the police commissioner. I had to threaten his job to get that. What do you have in mind for the finish?"

"Why . . . I hadn't given it any thought—that is, I haven't come up with any new ideas. I just figured that when the police took over, the cat would fight, and perhaps provide some final excitement."

"Not good enough, Vern. As far as we know she's unarmed. The police will simply shoot her down, and that will be the end of it. Rather anticlimactic, wouldn't you say?"

Nelson made a motion to speak, but the major stopped him with an upraised hand. "You understand, I'm not reprimanding you, Vern," he said. "You've done a splendid job. Better, I'm certain, than anyone else could have done in your place. But look at it this way. We've made a terrific run on this—so far. The greatest live spectacle of the century. There possibly will never be another like it. But. . . . A story such as this deserves a crash ending. We can't let it die with scarcely a whimper."

Nelson was forced to admit that the major was right. "Do you have any suggestions, sir?" he asked.

Gower shook his head regretfully. "I'm depending on you for that, son," he said. "You're my brand-new genius." He picked his hat and gloves from Nelson's desk, bowed genially, and walked out.

Nelson did not leave his office for lunch. He spent the morning and the early part of the afternoon going through files, old video programs, and generally racking his brain. He called any of his friends and acquaintances who might have an idea that would help him. Without any concrete results.

He knew he needn't come up with anything sensational; there was no necessity for more spectacles such as those of the cat displaying her ferocity. Just something that would pick up the pace. Something that would hang a closing grip of suspense to the story. A sort of final curtain scene.

The beginning of his idea came to him about one in the afternoon. The cat would certainly die today. As the protagonist in the story, it was a shame that she had to die beneath the guns of the police—without a chance to fight back—without even a small chance to win. If the odds against her could be made more even . . .

Nelson's next thought was to hire a professional hunter to track down the cat woman, and kill her, but he discarded that after a few minutes' consideration. That would be little better than letting the police do it. To make good copy this final scene had to be more of an even contest. It would be played up, on video, as a matching of wits and ingenuity between Earth man and cat woman. There had to be more to the tableau than a mere shooting. But who then, if not a professional hunter?

An hour's pouring through the news sheets brought the answer. The

Assassin. The reporters had given him that melodramatic alias when he'd killed his first man nearly eight years ago. He had been good for headlines many times since.

Nelson was a bit vague on the details of the Assassin's background, and he dug in the company files until he came up with the man's dossier.

His real name was Frank Hall. He lived in Anoka, Minnesota, about twenty miles from St. Paul. He could easily reach here in time, Nelson calculated mentally. Hall was definitely an eccentric, but a colorful eccentric.

He was a self-appointed dispenser of justice. Earth's courts, being dedicated to the maxim that "it is better that a thousand guilty men go free than that one innocent man be wronged," naturally erred often. Many guilty men escaped their just punishment.

Eight years ago a quite notorious criminal, with a record of many previous offenses, had shot and killed a child during a "getaway" following a robbery. With the aid of a clever lawyer, and obviously corrupt witnesses, the killer had been acquitted.

The following day he had received a note from Hall: *"You are guilty—you will die within the week."* Hall signed his name, which gave the man a fair break—and showed that Hall loved the dangerous play. Three days later the man died—in an automobile accident. There was no way to connect Hall with the occurrence.

Another acquitted killer seven months later received the same worded note. He was found dead in the basement of his own home. All the evidence pointed to suicide. Again Hall could not be linked with the death.

Fifteen other times since, Hall had sent his note. All had died. Nine by accident, or by their own hand. The other six had tried to avert their fate by killing Hall before he could kill them. He had been able to prove self-defense each time. His surname, the Assassin, was well earned.

Nelson's call to Hall's home in Anoka was answered by his wife, Gladys. A charming girl, Nelson noted. Frank was not in, she informed him. He had gone to Grand Forks—to watch the cat woman feature!

That should save some explaining. Nelson told himself. He did some more, tortured, mental mathematics. Hall could still reach here in time by plane.

He found Hall in on his second call.

"Mr. Hall," Nelson said, deciding to strike sharply, "my name is Vern Nelson. I'm the director of the special feature on the cat woman. I'm prepared to offer you twenty thousand dollars to kill her."

For just a moment Hall's face registered his surprise, and incredulity. Then he smiled. A sense of humor hid in the crinkles about his eyes. "Are you certain you have the right party?" he asked dryly. "I have never killed anyone—except in self-defense, of course."

"Of course." Nelson restrained his

own smile. "However, my belief is that a man hunting the cat woman would very soon find himself in a position where he *would* be defending his life," he said, matching Hall's dry tone.

"Probably true," Hall agreed reflectively, and sat regarding Nelson for a long moment. "I won't be coy, and ask why you called me," he said finally. "But why aren't you simply turning this over to the police?"

"The police have given us until eight o'clock tonight to handle it our own way. After that time they will do the job themselves."

"And this would be better video. The cat woman versus the Assassin."

"Touché," Nelson acknowledged. "I won't be coy either. That's exactly the reason why I'm offering you the twenty thousand dollars."

Hall shook his head regretfully. "This may sound ridiculous to you," he said, "but I'm just not constitutionally fitted to kill anyone in cold blood. Not even that she-animal. So I'm afraid I can't help you."

Nelson was not deterred. He had been leading toward the offer he was about to make since their conversation began. "Then let's pretend that this cat woman is one of the men you decided needed to be killed," he said. "Do it in the same manner you did the others—in a way that would leave you legally in the clear. If you succeed, I'll raise the ante to one hundred thousand. Or, I will pay you fifty thousand if you capture her, instead of killing her. How does that appeal to you?"

Hall was obviously intrigued. "She *is* a killer," he mused, almost to himself. "And it wouldn't be an unequal contest: There's a strong possibility that I might be killed myself." He paused, then made his decision. "You've hired yourself a hunter," he told Nelson.

Pentizel knew the time had come for her to change her plans; she was no longer safe in St. Paul. They would be able to recognize her now —even though they still did not know what she was. Further quick thinking made her realize that she would probably be safe nowhere here. She had to get to her spaceship and leave this world.

The taste of defeat was sour in Pentizel's mouth as she headed for the river. She was here, in a world of weaklings, physically and mentally her inferiors. She should have been able to rape it at will. Instead, less than a week after landing she was slinking away. She spat bitterly, and tore the flimsy Earth garments from her body.

She reached the river without difficulty. There were few people about this early in the morning. However, soon after taking cover in the brush growing along the river bank, automobiles began to pass carrying workers to their jobs, and her movements became more difficult.

It took her most of the day to traverse the two miles of river bank. She reached the ship site late in the afternoon—and her heart sank at what she saw. All the signs indicated that the ship had been removed from the river!

She was marooned on this deadly world!

Refusing to abandon her last shred of hope, Pentizel slipped into the open place in the icy river and swam down to where the ship had rested. It was gone. When her head broke through the water a minute later she snarled forlornly.

Her only chance to stay alive now, she decided swiftly, was to reach wooded country. She had no idea where that might be, but her best guess was to head north.

Suddenly all Pentizel's senses sounded an urgent alarm. Above her lurked danger!

She flattened against the river bank and probed for the nature of the threat. Only very small sounds came down to her. For several long breaths she lay tense and motionless. The only certainty she arrived at was that her life hung on how well she conducted herself the next few minutes.

Another five minutes passed before Pentizel was satisfied that only one person waited above her. Much of her high-pitched arrogance returned. She began to raise her head—infinitesimally slow. The first object that came within the range of her vision was the edge of an automobile top. That, then, was how her stalker had gotten here so soon. He had driven up while she had been submerged in the water.

Pentizel drew her body into a low crouch, and stealthily raised her head another fraction of an inch. And was caught ever so slightly off guard!

The barrel-chested man on the far side of the hood of the automobile stood so still that Pentizel found herself facing the mouth of his big-bellied pistol at the exact moment she became aware of his position. "If you move, you're dead," the man said, almost conversationally.

Pentizel froze. Quickly she assayed the situation. She could try a swift rush up the river bank—but she knew the potency of Earth guns. She had used them herself. She would have no slightest chance of reaching him before she died.

As Pentizel sought for another avenue of escape, or attack, a new realization came to her. Something in the man's manner, but mostly in the recalled inflections of his voice, told her that he did not intend to kill her. She puzzled that in her mind for an instant. Perhaps he thought he could capture her alive. If he thought that he was a fool—and it increased her chances of escape tremendously.

Knowing his intentions—at least to the extent that she was in no immediate danger—Pentizel allowed herself to relax slightly. If he were only foolhardy enough to allow her to come closer.

Almost as though he were co-operating with her secret thoughts, the man said, "Come up here." He paused. "Be very careful."

Pentizel began to move slowly, lithely, up the river bank. The big man directed her cautiously with his voice as she came. "Stay on the other side of the car from me . . . No, over this way . . . Careful . . . Don't make any sudden moves . . . Walk slower . . . Stop . . . Stand still until the police arrive . . . Remember, if you try to run I'll have to kill you."

Pentizel stood across the automobile hood from her hunter. If the automobile were not between them, she reflected, he would already be dead. If she thought of nothing better, she would still chance a leap across at him. He might be underestimating her speed and reflexes. She would probably still be able to kill him, even though he wounded her.

Two cautions in Pentizel's mind stopped that desperate rush: In her present circumstances, to be wounded would be as fatal as to be killed; and she would not take that last chance—until she was satisfied that she could find no better way.

The seconds crawled by. Pentizel studied the big man, the lack of fear in his eyes, the way he held his body, the steady grip of his hand on the butt of the big-bellied pistol. A bright sweep of exhultation rushed through Pentizel! His hand on the pistol butt!

She had found the one small error she had been looking for.

He was holding the pistol aimed steadily at her, but—his finger was not on the trigger. Whether it was carelessness, or overconfidence, Pentizel did not know. It made no difference. Her body blurred into action.

She did not quite reach the big man, and her body was sprawled across the car hood—but she had allowed for that. She *had* reached the pistol. And she clutched it in her hand now!

She twisted on her side and squeezed the trigger!

The final scene was still showing on the video screen when the major glanced across at Nelson. The manner in which he raised his eyebrows was better than the most effuse congratulations.

They both turned their attention back to the screen as they watched the last tense minute of the Special Feature's finale. The exploding pistol had blown a great patch from the side of Pentizel's head. She lay struck in tension for a long moment, her bloody hand still outstretched, then the starch went out of her body and she rolled off the hood of the automobile to the concrete pavement.

In the background the commentator's voice murmured softly.

"And so we end our story. . . ."

THE END

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

YOU TAKE THE HIGH ROAD

BY

FRANK HERBERT

The trouble with spotting a motive is that a given set of facts can be fitted into so many different theories—and the key facts can't always be spotted for what they are!

Illustrated by van Dongen

LEWIS ORNE clasped his hands behind his back until the knuckles showed white. He stared darkly out his second-floor window at the morning on Hamal II. The big yellow sun already above the distant mountains dominated a cloudless sky. It promised to be a scorcher of a day.

Behind him Orne could hear a scratchy pen rasping across paper as the Investigation and Adjustment operative made notes on their just-completed interview.

So maybe I was wrong to push the panic button, thought Orne. ***That doesn't give this wise guy the right to be such a heel! After all—this is my first job. They can't expect perfection the first time out!***

The scratching pen began to wear on Orne's nerves.

Creases furrowed his square forehead. He put his left hand up to the rough wooden window frame, ran his right hand through the stiff bristles of his close-cropped red hair. The loose cut of his white coverall uniform—standard for agents of the Rediscovery and Re-education Service—accentuated Orne's blocky appearance. He had the thick muscles and no-fat look of someone raised on a heavy planet—in his case, Chargon of the Gemma System. There was a full jowled bulldog appearance to his face. It was an effective disguise for a pixie nature.

At the moment, however, he was feeling decidedly unpixielike.

If I'm wrong, they'll boot me out of the service, he thought. *There's too much bad blood between R-and-R and the Investigation and Adjustment people. But there'll be some jumping if I'm right about this place!*

Orne shook his head. *But I'm probably wrong.*

The more he thought about it the more he felt that it had been a stupid move to call in the I-A. This planet of Hamal II probably was not aggressive by nature. There probably was no danger here of providing arms to a potential war maker.

Someone clumped down the stairs at the other end of the building. The floor shook under Orne's feet. This was an old building—the government guest house—and built of rough lumber. The room carried the sour smell of many former occupants.

From his second-floor window Orne could see part of the cobblestone market square of this village of Pitsiben. Beyond the square he could make out the wide track of the ridge road that came up from the Plains of Rogga. Along the road stretched a double line of moving figures: farmers and hunters coming for market day in Pitsiben. Amber dust hung over the road. It softened the scene, imparted a romantic out-of-focus look.

The farmers leaned into the pushing harness of their low two-wheeled carts, plodding along with a heavy-footed swaying motion. They wore long green coats, yellow berets tipped uniformly over the left ear, yellow trousers with the cuffs darkened by the dust of the road, open sandals that revealed horny feet splayed out like the feet of draft animals. The carts were piled high with green and yellow vegetables seemingly arranged to carry out the general color scheme.

Brown-clothed hunters moved with the line, but to one side like flank guards. They strode along, heads high, cap feathers bobbing. Each carried a bell-muzzled fowling piece at a jaunty angle over one arm, a spyglass in a leather case over the left shoulder. Behind the hunters trotted their apprentices pulling three-wheeled game carts overflowing with swamp deer, ducks and *porjos,* the snake-tailed rodents that Hamal natives considered such a delicacy.

On the distant valley floor Orne could see the dark red spire of the I-A ship that had come flaming down just after dawn of this day—homing on his transmitter. The ship, too, seemed set in a dreamlike haze: blue smoke from kitchen fires in the farm homes that dotted the valley. The red shape towered above the homes, looking out of place like an ornament left over from holiday decorations for giants.

As Orne watched, a hunter paused on the ridge road, unlimbered his spyglass, studied the I-A ship.

The smoke and the hot yellow sun conspired to produce a summery appearance to the countryside—a look of lush growing. It was essentially a peaceful scene, arousing in Orne a deep feeling of bitterness.

Damn! I don't care what the I-A says! I was right to call them. These people of Hamal are hiding something. They're not peaceful! The real mistake that was made here was made by that dumbo on First-Contact when he gabbled about the importance we place on a peaceful history!

The pen scratching stopped, and the I-A man cleared his throat.

Orne turned, looked across the low room at the operative. The I-A man sat at a rough table beside Orne's unmade bed. Papers and report folders were scattered all around him on the table. A small recorder weighted one stack. The I-A man slouched in a bulky wooden chair. He was a big-headed, gangling figure with over-large features, a leathery skin. His hair was dark and straggling. His eyelids drooped. They gave to his face that look of haughty superciliousness that was like a brand mark of the I-A. The man wore patched blue fatigues without insignia. He had introduced himself as Umbo Stetson, chief I-A operative for this sector.

Stetson noted Orne's attention, said, "I believe I have everything now. Let's just check it over. You landed here ten weeks ago, right?"

"Yes. I was set down by a landing boat from the *R-and-R* transport, Arneb Rediscovery."

"And this was your first mission?"

"Yes. I graduated from Uni-Galacta with the class of '07, and did my apprentice work on Timurlain."

Stetson frowned. "Then you came out here to this newly re-discovered backwater planet?"

"That's right."

"I see. You were just full of the old rah-rah, the old missionary spirit to uplift mankind and all that sort of thing."

Orne blushed, scowled.

"They're still teaching that 'cultural renaissance' bushwah at dear old Uni-Galacta, I see," said Stetson. He put a hand to his breast, raised his voice: "We must re-unite the lost planets with the centers of culture and industry, and take up the glorious onward march of mankind that was stopped so brutally by the Rim Wars!"

He spat on the floor.

"I think we can skip all this," muttered Orne.

Stetson chuckled. "You're sooooo right! Now . . . what'd you bring with you when you landed?"

"I had a dictionary compiled by the First-Contact man, but it was pretty sketchy in—"

"Who was that First-Contact, by the way?"

"I never met him but his name's in the dictionary: Andre Bullone."

"Oh— Any relation to High Commissioner Ipscott Bullone?"

"I don't know."

Stetson scribbled something on one of his papers. "And that report says this is a peaceful planet with a primitive farming-hunting economy, eh?"

"Yes."

"Uh, huh. What else'd you bring with you?"

"The usual blanks and files for my reports—and a transmitter."

"And you pushed the 'panic button' on that transmitter two days ago, eh? Did we get here fast enough for you?"

Orne glared at the floor.

Stetson said, "I suppose you've the usual eidetic memory crammed with cultural-medical-industrial information."

"I'm a fully qualified *R-and-R* agent."

"We will observe a moment of reverent silence," said Stetson. Abruptly, he slammed a hand onto the table. "It's just plain damn' stupidity! Nothing but a political come-on!"

Orne snapped to angry attention. "What do you mean?"

"This *R-and-R* dodge, son. It's an attention getter . . . it's perpetuating some political lives. But you mark my words: we're going to *re*-discover just one planet too many; we're going to give its people the industrial foundation they don't deserve—and we're going to see another Rim War to end all Rim Wars!"

Orne took a step forward. "Why'n hell do you think I pushed the panic button here?"

Stetson sat back. "My dear fellow, that's what we're just now trying to determine." He tapped his front teeth with the pen. "Now . . . just why *did* you call us?"

"I *told* you I'm not sure! It's just—" He shrugged.

"You felt lonely and decided you wanted the I-A to come hold your hand. Is that it?"

"Oh go to hell!" barked Orne.

"In due time, son. In due time." Stetson's drooping eyelids drooped even farther. "Now . . . just what're they teaching you *R-and-R* dummies to look for these days?"

Orne swallowed an angry reply. "Do you mean in war signs?"

"What else?"

"We're supposed to look for fortifications, for war games among the children, for people drilling or other signs of armylike group activities, for war scars and wounds on people and buildings, for indications of wholesale destruction and . . . you know, things like that."

"Gross evidence," said Stetson. "Do you consider this adequate?"

"No I don't!"

"You're sooooo right," said Stetson. "Hm-m-m. . . . Let's dig a little deeper: What bothers you about these people?"

Orne sighed. "They have no spirit, no bounce. No humor. The atmosphere around this place is perpetual seriousness bordering on gloom."

"Oh?"

"Yeah. I . . . I uh—" Orne wet his lips with his tongue. "I uh . . . told the Leaders' Council one day that our people are very interested in a steady source of *froolap* bones for making left-handed bone china saucers."

Stetson jerked forward. "You *what?"*

"I uh . . . told the—"

"Yeah! I got that. What happened?"

"They asked for a detailed description of the *froolap* and the accepted method of preparing the bones for shipment."

"And what'd you tell them?"

"Well, I. . . . Well, according to my description they decided that Hamal doesn't have any *froolaps."*

"I see," said Stetson.

"That's what's wrong with the place: no *froolaps."*

Stetson took a deep breath, sat back. He tapped his pen on the table, stared into the distance.

Now I've done it, thought Orne. *Why can't I keep my big mouth shut? I've just convinced him that I'm nuts!*

"How're they taking to re-education?" asked Stetson.

"Oh they're very interested in the industrial end. That's why I'm here in Pitsiben village. We located a tungsten source nearby and—"

"What about their medical people?" asked Stetson. "Are they on their toes?"

"I guess so," said Orne. "But you know how it is with medical people—they often have the idea that they already know everything. I'm making progress, though."

"What's their medical level?"

"They've got a good basic knowledge of anatomy . . . surgery and bone setting. That sort of thing."

"You got any ideas why these people are so backward?" asked Stetson.

"Their history says this planet was accidentally seeded by sixteen survivors—eleven women and five men—from a Tritshain cruiser that was disabled in some engagement or other during the early part of the Rim Wars. They landed with a lifeboat without much equipment and little know-how. I take it that it was mostly the black gang that got away."

"And here they sat until *R-and-R* came along," said Stetson. "Lovely. Just lovely."

"That was five hundred Standard years ago," said Orne.

"And these gentle people are still farming and hunting," murmured Stetson. "Oh lovely." He glared up at Orne. "How long would it take a planet such as this one—granting the aggressive drive—to become a definite war menace?"

Orne said, "Well . . . there are two uninhabited planets in this system that they could grab for raw materials. Oh, I'd say twenty to twenty-five years after they got the industrial foundation on their own planet."

"And how long before the aggressive core would have the know-how to go underground . . . if necessary . . . so that we'd have to blast the planet apart to get at them?"

"Six months to a year."

"You are beginning to see the sweet little problem you *R-and-R* dummies are creating for us!" Stetson abruptly pointed an accusing finger at Orne. "And let us make just one little slip! Let us declare a planet aggressive and bring in an occupation force and let your spies find out we made a mistake!" He doubled his hand into a fist. *"Ahah!"*

"They've already started building the factories to produce machine tools," said Orne. "They're quick enough." He shrugged. "They soak everything up like some dark gloomy sponge."

"Very poetic," growled Stetson. He lifted his long frame from the chair, stepped into the middle of the room. "Well, let's go take a closer look. But I'm warning you, Orne: this had better live up to whatever it was that prompted you to call us. The I-A has more important things to do than to go around wet nursing the *R-and-R!*"

"And you'd just love to get something on us, too!" said Stetson.

"You're sooooo right, son."

"O.K.! So I made a mistake!"

"We'll see. Come along. I've a go-buggy downstairs."

Here goes nothing, thought Orne. *This jerk isn't going to look very hard when it's easier to sit back and laugh at the* R-and-R*! I'm finished before I even get started!*

It was already beginning to grow hot outside when they emerged onto the cobblestone street. The green and yellow flag hung limply from its mast atop the guest house. All activity seemed to have taken on a slower pace. Groups of stolid Hamal natives stood before awning-shaded vegetable stalls across the street. They gazed moodily at the I-A vehicle.

The go-buggy was a white two-seater tear drop with wrap-around window, a turbine engine in the rear.

Orne and Stetson got in, fastened their safety belts.

"There's what I mean," said Orne.

Stetson started the motor, eased in the clutch. The buggy bounced a couple of times on the cobbles until the gyro-spring system took hold.

"There's what you mean what?" asked Stetson.

"Those dolts across the street back there. Any other place in the universe they'd have been around this rig ten deep, prying under the rear vents at the turbine, poking underneath at the wheels. These jerks just stand around at a distance and look gloomy!"

"No *froolap*," said Stetson.

"Yeah!"

"What's wrong with that?" asked Stetson. "So they're shy."

"Forget I mentioned it."

"I saw by your reports that there are no walled villages on Hamal," said Stetson. He slowed the go-buggy to maneuver between two of the low push carts.

"None that I've seen."

"And no military drill by large groups?"

"None that I've seen."

"And no heavy armaments?"

"None that I've seen."

"What's this *none-that-I've-seen* kick?" demanded Stetson. "Do you suspect them of hiding something?"

"I do."

"Why?"

"Because things don't seem to fit somehow on this planet. And when things don't fit there are missing pieces."

Stetson took his eyes from the street, shot a sharp glance at Orne, returned his attention to the street. "So you're suspicious."

Orne grabbed the door handle as the go-buggy swerved around a corner, headed out the wide ridge road. "That's what I said right at the beginning."

"We're always simply delighted to investigate *R-and-R's* slightest suspicions," said Stetson.

"It's better for me to make a mistake than it is for you to make one," growled Orne.

"You will notice that their construction is almost entirely of wood," said Stetson. "Wood constructions is peaceful."

"Doesn't that depend on what weapons are used?" asked Orne.

"Is that what they're teaching you at dear old Uni-Galacta?"

"No. That was my own idea. If they have artillery and mobile cavalry, then forts would be useless."

"And what would they use for cavalry?" asked Stetson. "There are no riding animals on Hamal. According to your reports, that is."

"So I haven't found any . . . yet!"

"All right," said Stetson. "I'll be reasonable. You spoke of weapons. What weapons do they use? I haven't seen anything heavier than those fowling pieces carried by their hunters."

"If they had cannon, that'd explain a lot of things," muttered Orne.

"Such as the lack of forts?"

"You're damn' right!"

"An interesting theory. How do they manufacture those guns, by the way?"

"They're produced singly by skilled artisans. It's a sort of a guild."

"A sort of a guild. My!" Stetson pulled the go-buggy to a jolting stop on a deserted stretch of the ridge road. "Did First-Contact see any sign of cannon?"

"You know he didn't!"

Stetson nodded. "Mm-m-m, hm-m-m-m."

"But that could've been an accident," said Orne. "What I don't like is that the stupid jerk shot off his face and told these people right off how important it is to us that a re-disk planet have a peaceful outlook."

"You're sooooo right. For once," said Stetson. He got out of the buggy. "Come on. Give me a hand."

Orne slid out his side. "Why're we stopping here?"

Stetson passed him the end of a tape measure. "Hold that on the edge of the road over there like a good fellow, will you?"

Orne obeyed.

The ridge road proved to be just under seven meters wide. Stetson wrote the figure in a notebook, muttered something about "lines of regression."

They got back into the buggy, moved on down the road.

"What's important about the width of the road?" asked Orne.

"I-A has a profitable side line selling omnibuses," said Stetson. "I just wanted to see if our current models would fit on these roads."

Funny man! thought Orne. He said, "I presume it's increasingly difficult for I-A to justify its appropriations!"

Stetson laughed. "You're too sooooo right! We're going to put in an additional line of nerve tonic for R-and-R agents."

"Hah!"

Orne leaned back into his own corner, became lost in gloom. *I'm sunk! This smart-Aleck isn't going to find anything I haven't found. There was no real reason to call in the I-A except that things don't feel right here!*

The ridge road dipped down to the right through scrub trees.

"We finally get off the high road," said Stetson.

"If we'd kept straight on, we'd have gone down into a swamp," said Orne.

"Oh?"

They came out onto the floor of a wide valley that was cut by lines of windbreak trees. Smoke spiraled into the still air from behind the trees.

"What's the smoke over there?" asked Stetson.

"Houses."

"Have you looked?"

"Yes I've looked!"

"Touchy, aren't we?"

The road bore directly toward a river. They crossed on a crude wooden bridge. Stetson pulled to a stop on the opposite side of the bridge, stared at the twin lines of a narrow cart track that wound along the river.

Again they got under way, heading toward another ridge.

The I-A man looked thoughtful. "Let's go over that about their government again," he said.

Orne raised his voice above the whine of the turbine as it began to labor in the climb up the other ridge. "What do you mean?"

"That hereditary business."

"I just said that Council membership seems to be passed along on an eldest son basis."

"Seems to be?" Stetson maneuvered the buggy over a rise and onto a road that turned right down the crest of the ridge.

"Well, they gave me some hanky panky about an elective procedure in case the eldest son dies."

"I see. What games do these people play?"

"I've only seen one: it's played by sixteen men in teams of four. They use a square field about fifty meters on a side with smooth diagonal ditches crossing from corner to corner. Four men take stations at each corner, and rotate the turns at play."

"What do they do? Crawl at each other along the ditches?"

"Very funny! They use two heavy balls pierced for holding with the fingers. One ball's green and the other's yellow. Yellow ball goes first: it's rolled along the ditch. The green ball's supposed to be thrown in such a way that it smacks the yellow ball at the intersection."

"And a great huzzah goes up!" said Stetson.

"No audience," said Orne.

"Anyway, it seems like a peaceful game," said Stetson. "Are they good at it?"

"Remarkably clumsy I thought. But they seem to enjoy it. Come to think of it: that game's the only thing I've ever seen them even come close to enjoying."

"You're a frustrated missionary," said Stetson. "People aren't having any fun: you want to jump in and organize games!"

"War games," said Orne. "Have you ever thought of that one?"

"Huh?" Stetson took his eyes off the road momentarily. They bumped off the edge. He jerked his attention back to his driving.

"What if some smart *R-and-R* agent set himself up as emperor on his planet?" asked Orne. "He could start his own dynasty. First thing you'd know about it is when the bombs started dropping!"

"That's the I-A's personal nightmare," said Stetson. He fell silent.

The sun climbed higher.

Their road dipped into a slight hollow, slanted up to a new ridge, swung left along the crest. They could see another village on high ground in the distance. When they were close enough to see the green and yellow flag atop the government building, Stetson pulled to a stop, opened his window, shut off the motor. The turbine keened downscale to silence. With the window open, the air-conditioning off, they felt the oppressive heat of the day.

Sweat began pouring off Orne, settling in a soggy puddle where his bottom touched the plastic of the seat.

"What're we doing here?" asked Orne.

"Waiting."

"Waiting for what?"

"For something to happen," said Stetson. "How do the natives feel about peace?"

"Oh, they think it's wonderful. The Council members are delighted by the peaceful activities of *R-and-R.*"

"Now tell me why you punched the panic button!" demanded Stetson.

Orne's mouth worked soundlessly. Then he blurted: "I told you before I wasn't sure!"

"I want to know what set you off," said Stetson. "What was the straw that grounded the blinking rocket?"

Orne swallowed, spoke in a low voice. "They held a banquet for—"

"Who held a banquet?"

"The Council. They held a banquet for me. And . . . uh—"

"They served *froolap,*" said Stetson.

"Do you want to hear this?"

"Dear boy: I'm all ears."

"You're sooooo right!" said Orne. "Well . . . what they served me was a stew of *porjo* tails that—"

"Porjo?"

"It's a kind of a rodent that they consider a delicacy. Especially the tails. Anyway, what they did was . . . well, the cook just before bringing the stew in and planking it down in front of me he tied up a live *porjo* with some kind of cord that dissolved quickly in the hot liquid. This animal erupted out of the pot and all over me."

"So?"

"They laughed for five minutes."

"You mean they played a practical joke on you and you got mad? I thought you said they had no sense of humor?"

"Look, wise guy! Have you ever stopped to think what kind of people it takes to put a live animal in boiling liquid just to play a joke?"

"A little heavy for humor," said Stetson. "But playful all the same. And that's why you called in the I-A?"

"That's part of it!"

"And the rest is your deep dark suspicions!"

Orne's face darkened with rage. "So I got mad and pulled a stupid boner! Go ahead! Make something out of it!"

"I fully intend to," said Stetson. He reached under the dash, pulled out a microphone, spoke into it: "This is Stetson."

So I've really had it! thought Orne.

A humming sound came from beneath the dash followed by: "This is the ship. What's doing?"

"We've got a real baddy here, Hal," said Stetson. "Put out an emergency call for an occupation force."

Orne jerked upright, ogled the I-A man.

The dash speaker clanked, and the voice said: "How bad is it?"

"One of the worst I've ever seen. Put out a VRO on the First-Contact: some jerk named Bullone. Have him sacked. I don't care if he's Commissioner Bullone's mother! It'd take a blind man and a stupid one at that to call this joint peaceful!"

"You going to have trouble getting back?" asked the voice.

"I doubt it. They don't know yet that we're on to them."

"Give me your grid just in case."

Stetson glanced at an indicator dial on the dash. "A-8."

"Gotcha."

"Get that call out, man!" said Stetson. "I want a full O-force in here by tomorrow night!"

"Right away."

The humming sound stopped.

Stetson replaced the microphone, turned to Orne. "So you just followed a hunch?"

Orne shook his head. "I—"

"Look behind us," said Stetson.

Orne stuck his head out the open window, stared back the way they had come.

"See anything curious?" asked Stetson.

Orne felt giddy. He said, "I see a late coming farmer and one hunter with apprentice moving up fast on the outside."

"I mean the road," said Stetson. "You may consider this a first lesson in I-A technique: a wide road that follows the ridges is a military road. Always. Farm roads are narrow and follow the water level route. Military roads are wider, avoid swamps, and cross rivers at right angles. This one fits all the way."

"But—" Orne fell silent as the hunter came up, passed their vehicle without a side glance.

"What's that leather case on his back?" asked Stetson.

"Spyglass."

"Lesson number two," said Stetson. "Telescopes always originate as astronomical devices. Spyglasses are always developed as an adjunct of a long-range weapon. I would guess that fowling piece has an effective range of probably one hundred meters. Ergo: you may take it as proved that they have artillery."

Orne nodded.

"Now let's look at this village," said Stetson. "Notice the flag. Almost inevitably they originate as banners to follow into battle. Not always. However, you may take this as a good piece of circumstantial evidence in view of the other things."

"I see."

"Now let's consider your Leader's Council," said Stetson. "That's nothing but a civilian aristocracy. Rule one in our book says that whenever you have a situation of haves and have-nots, then you have positions to be defended. That always means armies. I'll bet my bottom credit that those gaming fields of the green and yellow balls are disguised drill grounds."

Orne swallowed. "I should've thought of that."

"You did," said Stetson. "Unconsciously. You saw all of this unconsciously. It bothered hell out of you. That's why you pushed the panic button."

"I guess you're right."

"Another lesson," said Stetson. "The most important point on the aggression index: peaceful people don't even discuss peace. They don't even think about it. The only way you develop more than a casual interest in peace is through the violent contrast of war."

"Sure!" Orne took a deep breath, stared at the village. "But what about the lack of forts?"

"We can take it for granted that they have artillery," said Stetson. "Hm-m-m." He rubbed at his chin. "Well, that's probably enough. I guess you don't have to have mobile cavalry in the equation to rule out forts."

"I guess not."

"What happened here was something like this," said Stetson. "First-Contact, that stoop Bullone, jumped to a wrong conclusion about these people, and he tipped our hand. The rulers of Hamal probably got together, declared a truce, hid or disguised every sign of war they knew about, and concentrated on milking us for all they could get."

"That figures," said Orne. He was just beginning to feel the emotional cleansing of relief.

"I think you'll make a pretty good I-A operative," said Stetson.

"I'll make a— Huh?"

"We're drafting you," said Stetson.

Orne stared at him. "Can you do that?"

"There are still some wise heads in our government," said Stetson. "You may take it for granted that we have this power." He frowned. "And we find too damned many of our people the way we found you!"

Orne swallowed. "This is—" He fell silent as the farmer pushed his creaking cart past the I-A vehicle. They stared at the peculiar swaying motion of the farmer's back, the solid way his feet came down, the smooth way the high-piled vegetable cart rolled over the road.

"I'm a left-handed *froolap* myself!" muttered Orne. He pointed at the retreating back. "There's your cavalry animal. That damn' wagon's nothing but a chariot!"

Stetson slapped his right fist into his open left palm. "Damn! Right in front of our eyes all the time!" He smiled grimly. "There are going to be some surprised and angry people hereabouts when our occupation force arrives."

As it turned out, he was "soooooo right."

THE END

FOOL.. ..KILLER

BY STANLEY MULLEN

It would take the flawless—but irrational—logic of a computer to reach such a decision. But once reached, Johnny Kell had a license to go hunting....

Illustrated by van Dongen

MEN die in space. In a sense, Johnny Kell started dying when the space shuttle picked him up after his trial and took him out to the asteroids where the prison workships ply their eternal orbits. It took about three years to complete his dying, which is about par for the prison ships and slightly above par for the men on off-ship duty, mining the asteroids or manning the deadly atomic reactors located there for the sake of public safety.

Most men sent to the asteroids either go mad or die very quickly. Johnny Kell lasted longer than most, because he wanted to live and stay sane. Between the constant strain of possible runaway chain reaction, and the more insidious and certain danger of radiation seepage, Kell had little chance of either living or staying sane. Actually, his death warrant was signed, sealed and practically carried out by the time he was pulled from his work group and taken to the prison-ship hospital en route to the morgue. It was far too late for effective medical attention.

Prison workshops are built in the asteroids and stay there. Their orbits never intersect those of any planets, and the only contact between them and the rest of society are the occasional shuttle-spacers bringing up netfuls of new fish and taking away atomic products in exchange for supplies and manpower replacements. Such a prison is escape proof. The only way out is madness or death. Prisoners have been known to blow themselves out air locks, but that is only a madder form of suicide, and the space-frozen bodies are usually recovered for the surgical replacement vats. That is hardly a real escape.

For a time, Johnny Kell had sustained himself with the hope that somehow the machinery of justice back on Earth would discover the truth and exonerate him. He knew he was innocent if nobody else did, and he held to the thought as long as possible. He was tough, but not tough enough. Finally, he gave up and waited for death or madness. He had not long to wait. The doctors gave him the bad news bluntly.

"You say I'm going to die?" he asked apathetically.

"Yes."

"Nothing can be done for me?"

"Here, nothing. On Earth, very little as late as this. Your condition is too advanced. Cancer. Possibly latent. A kind you can get only in the asteroids—stimulated by radiation. On Earth, its progress could be delayed slightly. Nothing more."

Johnny sighed. Life on its present terms was unsupportable.

"No advantage in stringing it out, even if it were possible. How long have I?"

They consulted. "Not long. Nobody can say exactly. A month at the outside."

Johnny Kell laughed. "At least I'll be out of this. At my trial I was given a choice of immediate execution or going out to the prison workships. I guessed wrong, but it comes out the same nothing after all. I suppose I'll be drugged to kill the pain—"

There was some embarrassment. "We're not savages, Kell. Nothing in your sentence included mental or physical torture. But the truth is, we're low on medical supplies. Not enough drugs to last you through a full month. Pain won't be too bad at first, so we suggest you hoard a heavier dosage for later stages. Under the circumstances, we feel justified in making you an unusual offer. It may cost our careers, but we can give you an easier way out."

Kell's lips twisted bitterly. "Mercy killing?"

"Euthanasia, if you insist on a word. Something painless and quick-acting left within your reach. An unfortunate accident, from the standpoint of medical jurisprudence. Nobody need know any different."

The patient stared down the circle of doctors with pain-blanked eyes. He shook his head slowly. "Oh, no!" he said, writhing with a preliminary twinge. "You can't get out of this as easily as that. Since you haven't even the guts to do it for me, I want all of you to watch and remember how long it took society to kill an innocent man—the hard way."

"You're being stubborn," accused the head doctor, "but it's your choice. If you change your mind, we'll be around—"

Sweating, Johnny Kell shook his head. "I will take some of those painkilling drugs right now."

"I wouldn't," advised the doctor. "The later stages are . . . pretty bad."

"I'll wait."

Even so, about the middle of the third week, the prison hospital ran out of drugs. Johnny Kell held on. His life-sentence seemed longer than any lifetime had a right to be.

At the end of the third week, there was an ironic and hideous complication, legal not medical. A message arrived from Earth ordering the return of John W. Kell, prisoner 2639478, at the earliest possible moment. There was more, carefully worded, but under the circumstances, extremely disturbing. A crime commission on a routine investigation had found grave errors of procedure in the Kell trial. Worse, evidence against him upon being sifted had been found false. The trial had been set aside, its findings and his sentence reversed. Kell was innocent, and a governmental pardon was on its way through snarls of red tape.

Law, somebody has said, is nothing if not logical, and it is not logical. Human justice is fallible, and divine justice is rarely available. Public opinion, stirred by publicity over the injustice to Kell, developed into a riptide of resentment against all trial procedure. Demands were being made that a better system be found, one less prone to error, and completely immune to the prejudice, venality and entrenched stupidities of antiquated court procedure.

Expert opinion pointed out that an instrument of pure logic, untainted by human weakness and corruption, was available. A robot calculator—electronic brain—is such an instrument, constructed to deal with elemental relationships, provided with memory-banks for precedent, definition and statute, and in giving decisions upon complex points capable of shaving a hair of legal thought into infinitesimal cutting edges. Public opinion was boiling over, and politicians and legal authorities read the handwriting on the wall. They had been weighed in their own blind balances and found wanting. They were in no position to advance objections to the simple device of reducing all evidence and modes of procedure in civil or criminal cases to cybernetic code and submitting the complete problem to a giant calculator for logical solution.

Such furor seemed to have little to do with the present status of Johnny Kell. Johnny knew nothing of it, and cared less. Buck-passing being a fine art in governmental institutions, it was left to the head doctor to notify Kell of his exoneration.

Johnny Kell laughed harshly.

"A little late to mean very much, isn't it?" inquired Johnny Kell from his bed of pain.

"Far too late," agreed the doctor, "but I hoped it might ease your mind slightly. You're dying, but if the pardon arrives in time, you'll die a free man."

"Pardon!" exploded Kell. "I won't accept a pardon. A man learns a lot about hate in three years. Your mind festers and poison spreads through your body. You would die of it if not of the radiation. And I won't give up my hate for a few empty words or paper formalities. I don't like being pardoned for committing a crime I never committed."

"It's just a technical term," argued the doctor. "It really means you're exonerated. Won't you let us do that for you?"

"No," said Kell stubbornly. "I won't give you even that satisfaction. I won't accept a pardon, and I won't pardon any of you. Or anyone else connected with what's happened to me. I want a full pound of flesh for every minute I've spent in this private hell you arranged for me. I'm serving my life term, minute by minute, and the pain is squeezing the last ounce of punishment from my body. Do you think you can balance the accounts by saying it isn't true?"

"Nobody denies the ugly reality," admitted the doctor. "I'm on your side. I like you, Kell, and I don't blame you for your hate and anger and bitterness. Instead of your committing a crime against society, society has committed a worse one against you. And it's still going on. But society admits its mistake and wants to correct it."

"How?" asked Johnny Kell. "Can you give me back my life?"

The doctor frowned, thinking hard. "Maybe I can," he said, shaken by the extravagance of a sudden idea. "But I'd like to think about it before making any promises."

"Take your time," jeered Kell, turning his back to hide the agony on his face. "A week can be all the time there is—"

In an hour, the doctor was back.

"I think I can do something for you, Johnny. It's a risk, and if you haven't much to lose, I have. So I hope you realize I'm a good friend if I'm willing to take such a risk for you."

Johnny Kell managed a ghastly grin. "I'll take your word for that, doc. But if it's euthanasia again, forget about it."

"Not that exactly. But I'll need your help and your legal permission to try. Even then, if I fail, I'll probably be up on a criminal charge. There's a new surgical technique for such cases as yours. All involved tissue must be cut out and replaced with spare parts from the preservative vats. It's still in the experimental stage, never been tried on human beings for obvious reasons. It has worked on laboratory animals, but there's a big difference."

"Maybe the animals don't think so. What's the picture, doc?"

"The trouble is, such an operation can't be performed on a living man. Too prolonged, and too great a shock to the living organism. Nobody could live through it."

"That's a great help," said Johnny Kell morosely.

"You're dying anyhow, so you haven't much to lose. For this, you'll have to go quick and clean. I'll put you in deep freeze and take my time over the operation. Afterward, there's a chance I can thaw you out and use electrical shock and adrenalin to get you going again. As I say, it was actually done with laboratory animals. They lived again, and seemed to function normally. But they are far less complex organisms. Make no mistake about one thing, this is not suspended animation. You'd really be dead, clinically, legally and every other way. If you come back, it will be the scientific equivalent of resurrection."

"You could try this without my permission."

"Not ethically. And I think there's more involved than physical body. Call it will, or identity, or soul, or whatever—I still want it working for me if I tackle this job. I wouldn't even use a convicted criminal in an experiment of this kind against his will, and you're not that. Except for a few legal technicalities, you're a free and innocent man. Ordinarily I would not trespass beyond the bounds of proved medical procedure, but for you I will, as my contribution to partial payment for everything you have suffered at the hands of society. Also, I can arrange a grant of money from the Surgical Research Foundation for the use of your body in an experiment. If you live, you will be free, rich, and whole in body. That is, if we're both lucky."

Johnny Kell shrugged. "I hope you're not tying your luck to mine, doc. So far, mine has all been bad. Does this tie in with my accepting a pardon?"

"There's no connection."

"Then I'll call your bluff. I agree

to the experiment and will take the money grant. The pardon, no. I'm rejecting it, so I can go back to Earth and demand a real accounting from the people who did me dirt. Can you understand that, doc?"

The doctor smiled indulgently. "I'm afraid I can. But I'm also afraid you'll be disappointed. Your suit, if it ever comes off, will have to go through the same kind of courts which convicted you. There's a great deal of difference between real justice and the kind you will get. I doubt if you'll obtain any satisfaction at all—"

He was wrong on both counts. . . .

Months later, Johnny Kell awakened back to life. He was the sole passenger in a special hospital ship on his way back to Earth. Back to the Earth which had rejected and condemned him. Curiously, his first and most difficult adjustment was in getting used to a body free from pain. For a long time, nerves braced themselves against nonexistent agonies, and gears spun freely in his brain, with no resistance. He felt dislocated.

Emotion nearly strangled him as he set foot on Earth, but it was not the comfortable nostalgia of most returning space voyagers. It was familiar emotion, but warped and distorted almost beyond recognition. He did not attempt to identify it.

His determination to demand judicial satisfaction for his injuries actually put him in technical jeopardy again. While he was in no real danger of being sentenced as before, the whole farce of trial had to be reenacted, and a new jury directed by a new judge to a verdict of acquittal. But that was just the beginning. His first act as a free man was to file suit in civil court to demand accounting for a sentence already served. Death in both the real and the legal sense had completed his life-term, so Johnny Kell presented a full ledger for balance.

Publicity over the Kell case reminded the great and noisy body of public opinion that too many others had suffered from the antiquated and illogical legal machinery available. Public outrage and Johnny Kell's private resentment reached an apex about the same time. And politicians with an ear to the wind yielded to rising pressure. They agreed reluctantly that at least once a possibly better system must be tried.

A giant computer could impartially weigh evidence, reach a non-juried conclusion, and be trusted to sentence a prisoner or decide a dispute with logical fairness beyond that of any human judge.

By legislative decree, the efficient mechanism of an electronic brain was ordered to take over the functions previously relegated to creaking medieval practices. And the first case to be tried electronically was that of John W. Kell versus the World State. Plaintiff claimed both actual and punitive damages, the first for grievous injury, the second as a warning to organized society to be more careful in the future about demanding the life and liberty of a citizen as a sacrifice to the doubtful safety of society.

The giant calculator was neither the mills of the gods grinding exceedingly fine, nor a modern Solomon dividing disputed babies with a sword, but its judgment rendered in favor of John W. Kell, plaintiff, partook of elements of both. That single judgment, often challenged in vain, dealt organized society a low blow which will be remembered for generations, especially by the eye-for-an-eye adherents who scream loudly for justice to others and just as loudly for mercy to themselves. Defense had stipulated admission of all evidence concerning both trials of Kell, frankly admitting the injury, pleading good faith, and throwing itself on the mercy of the court, forgetting that a robot brain knows more of logic than of mercy.

Judgment was simple, direct, logical—and terrifying.

Johnny Kell had served the full penalty for the major crime of murder, of which he was not guilty. Hence, society owed Johnny Kell one major crime, up to and including murder or treason, without fear of punishment. It was a judgment with Old Testament flavor, logical, but touched with wry electronic humor. Johnny Kell still had his murder coming.

In his hotel room, Kell stood at the window looking out over the city which was a sprinkle of lights upon a sea of darkness. His mind felt like a garbage can full of indigestible thoughts and emotions. He was not sure the judgment of the electronic brain was anything like what he had in mind, but he was not sure what had been in his mind. He had wanted to strike back at the world, and this extraordinary development gave him a chance. The idea held some delightful possibilities, but there was one fatal flaw. Vengeance was limited to a single victim.

In the prison workships a man can get so filled with hate that one murder is not enough. To satisfy a cosmic thirst for vengeance, Johnny Kell felt that he should have been granted the license to kill anyone and everyone who had ever done him an injury. He was satisfied with the verdict as far as it went, but was not certain that it went far enough.

But he could and would extend his pleasure as far as possible. He could take his time, select a victim, stalk that victim openly, and then if he chose, kill in full view. He was not required to specify a victim. Until he did choose and until he acted upon his choice, he could inflict an infinity of minor torments upon any number of possible subjects. The power of life and death rested in his hand as lightly as a whip.

Once he had used his murder-for-free, the comedy would be over.

For the moment, he was a lonely, hurt and embittered child—newborn, in a sense—and he had an interesting toy. He would play with it a while, before he broke it. Play with people a while. Most of the people he could remember, for whatever reason. And if he never used his toy carelessly or broke it, the amusement it gave him could last indefinitely.

In imagination, he flicked the whip. . . .

Society was not too happy with the judgment of the robot brain. Steps were taken immediately to get power back into the hands of less logical, but more perdictably human judges and juries. Politicians and legal bigwigs swarmed like hives of overheated bees. New laws were passed. Old laws revised. There was much talk and some quick action. Controlled mobs urged on by propaganda smashed computers. Eventually, of course, machinery of human justice and injustice was returned to the hands of the ancient corruptibles. At worst, their failings were human.

But in spite of fair means and foul, the judgment of the electronic court in the Kell case stood up. Decision was irreversible. Even the human-animal felt that somehow the decision was fair and logical, although the mistake could not be allowed to happen again. Who actually wants real justice? The question was asked, and echo answered, Nobody. But the public, safe in its vastness, wanted a touch of imagination to leaven otherwise dull and tiresome lives. The public brought pressure to bear and Kell's license to kill stood up.

Kell flicked his whip and everyone who had known him jumped through hoops. At least, they jumped. He went armed and the world watched and waited, hoping for a sudden flare of violent melodrama.

First violence—a predictable development—did not come from Kell. Masked men broke into his hotel room, riddled a mound of harmless bedcovers, and vanished. They missed Kell by minutes of time, and slightly more units of space. He was down the hall hunting for a service robot which had broken down on the way to his room. Johnny Kell was not impressed. Violence and sudden death were commonplace in the asteroids. But his jaw muscles tightened slightly.

Reporters and roving TV cameras had a field day. For a while Kell was tripping over power cables and bumping into strangers equipped with walkie-talkie wherever he went. It got on his nerves, so he quickly learned the tricks of evading them. The public hugged itself with vicarious excitement, anticipating more violence in the making.

Johnny Kell asked himself only one question: Who hated, or feared, him badly enough to try for the first blood? He kept a list in his pocket of names he remembered. At intervals he would take it out and study the names. Sometimes, as memory stirred, he added a name. Again, after careful thought, he struck one from the list. These last were names he could no longer associate with faces or definite misdeeds.

He was lonely, and found himself in the paradoxical position of a man who, sooner or later, must commit a murder to rejoin the human race.

Nobody dared avoid him openly, but none sought his company. No one he knew. There were always the cranks and the newshounds and picture people. These, he tried to avoid.

Johnny Kell had lost touch with all of his old friends, and none of them looked him up. News agencies, hoping to stir up some action before the public grew bored and clamored for blood, opened their facilities to him. At the hint of a question, they supplied full details about everyone he knew. Where they were, what they had done during his absence, and with whom.

There was the girl, Marya Kottel. Johnny Kell's interest in her was sentimental, not lethal. For old times' sake, he wanted to look her up, but with no intention of resuming a mutually unsatisfactory romance. They had always been good friends and had somehow never managed to get beyond that. Both had understood that they never would, or thought they had. And Johnny knew that she was married now, living with her husband in the suburbs of the same city. He hoped she was happy, and merely wanted to talk to someone.

Kell learned that Marya's married name was Steffens and dialed her visiphone number.

"Hello, Johnny," she said, answering.

"Hello, Marya."-The conversation hung at that point.

"You're looking tired," Kell said. "Are you all right?"

"All right. Worried, maybe, not tired. I'm married, you know."

"Yes, I know. I'd like to see you, Marya, in person."

She showed visible reluctance. "Why, Johnny? Have we anything to talk about?"

"I don't know, Marya. Maybe we have. It's just that I'll go crazy if I don't talk to someone."

"Can't you leave us alone, Johnny?"

"Are you happy?"

She hesitated. "I guess I am. Marriage doesn't solve problems. We're as happy as most people."

"Why are you afraid of me, Marya?"

"Who wouldn't be?" she cried bitterly. "I'm afraid of you because the alibi I was supposed to give you at your trial got tangled up."

"It would have fallen apart anyhow, Marya. It was a false alibi, and my lawyer should have known better than to ask you for it. I don't hold any grudge about that."

"My husband is afraid of you, too. He was foreman of the jury that convicted you. He saw me at the trial. He came to see me afterward to offer his sympathy. He even felt sorry for you. He's not a bad man, but he's weak. He's afraid."

"He needn't be. Let me see you, just once, so I can explain why. I won't bother you after that. Your husband can be there, if he likes."

"He wouldn't dare. Come tomorrow night, if you insist. Make it early."

She broke off the connections.

The house was comfortable, not

too isolated in its green and tended yard. Marya let Johnny Kell in and offered him a chair and drink. Over the glasses, they studied each other with silent strain. Her husband was not in evidence. Marya seemed nervous, even more so than the awkward situation required.

"Are you going to kill us, Johnny?"

"Is there any reason I should, something I don't know?"

"I thought you might feel betrayed."

"You were just confused at the trial."

"Only in my emotions. Not in my thinking. I resented your attitude toward me. Any woman would. Yes, we had unspoken agreement not to fall in love. But no woman ever agrees honestly to such a travesty of a natural relationship. I fell in love and kept pretending, hoping you would find me out. But love, left too long, curdles like anything else. My love went sour, and I hated you. Subconsciously I wanted to punish you."

Johnny Kell's eyes pitied her. "I never realized I was hurting you, Marya. I was stupid, I suppose, but it's hard for a man to realize a woman cares for him. That was a long time ago."

"Perhaps we were both stupid," she said woodenly. "And we both paid bitterly for it. I hated you then too much to lie for you and I've hated myself ever since because I didn't. If you want to kill me now, you'd better do it. I don't blame you."

"Don't be silly, Marya. I wouldn't harm you. I'm still fond of you, in my stupid way, and I only wanted to see if you were happy. Are you expecting your husband soon?"

A shadow of real fear crossed her face. "Don't blame him for what I did to you, Johnny."

Johnny Kell laughed. "It wouldn't be worth it. I had no intention of hurting either of you. I mean it."

"I believe you do." Her mouth sagged open and her face became a rubbery mask. She stared blindly.

"Johnny!" she screamed. "Go now. Go quickly, while you can. I was supposed to let you come here, to trap you. But I can't go through with it. He got together with some of the others. They are frightened and desperate. They hired men to come here and kill you. Get out the back way."

Johnny Kell grinned, but his voice was savage.

"Won't they be waiting there to ambush me?"

"I was supposed to signal when you were leaving. You can still have a chance. Surprise them, and get through safely. Don't stand there talking, or looking at me. I don't want you killed."

Johnny Kell dialed the police number and gave Marya's address. "Better bring an ambulance," he added.

"They won't get here in time," wailed Marya. "If you don't go out, they'll rush the place."

"What about your signal?" he asked.

"That call," she said. "They were watching. Any outgoing visiphone call from here was the signal."

"Then I'll have to go out, won't I? I can't risk having you hurt when they break in. How about your husband?"

"He won't be there. They hired professional killers."

Johnny Kell shrugged. "I feel sorry for you. Married to a man who lacks guts to do his own killing."

"He's not the type," she said, half-apologetically. "I couldn't love a man who was."

There seemed nothing further to say. Johnny Kell cut the lights and moved to the door as lightly as a cat. He flung open the door and dropped to the floor in one motion. The yard was full of darkness, and suddenly the darkness was full of sound. Bullets rattled through the open doorway like gusts of wind-driven hail. Kell wormed his way back across the room to the opposite door, cautiously edging it open. As he expected, more firing greeted this maneuver. Slugs ricocheted, screaming, in the room.

Somewhere a window dissolved in jangling glass. Behind him was a sharp cry.

Kell crawled blindly across the room. Groping, he found Marya and a wetness of blood. As he touched her, she went limp, like a sack collapsing as air leaks from it. Her breath came in sobbing gasps. Kell tried to rig a pad to stanch the bleeding.

Marya stirred weakly.

"Is it bad?" Kell asked.

"I don't know. It hurts."

"Try to hold on," he urged in whispers. "The police will be here soon. With ambulance 'copters."

"Wait for them," she pleaded. "Don't go outside. They will kill you. I don't want your death on our hands."

Kell waited, unwilling to leave her.

In the distance a chromatic wail of siren hung like a disenchanted ghost upon the stillness of night. Later, came the rustling clatter of 'copter blades overhead. In the garden was confused violence. Kell switched on the lights as uniformed police burst into the room. Two burly policemen forcibly restrained a short man with large, balding head. Kell could not remember the man, but Marya's husband remembered him.

A foam-flecked mouth worked at sight of Marya's limp body stained with blood. "Murderer!" screamed Steffens, struggling to reach his injured wife.

"Murderer yourself," said Kell calmly. "My gun hasn't been fired." He handed his weapon to a police official who examined and returned it. "Better get the woman to a hospital."

"Better kill me while you can," threatened Steffens. "I'll get you for this."

Kell studied the man unemotionally.

"Don't tempt me," Kell told him. "With only one murder for free, I wouldn't want to waste it on you."

Kell turned away. Somewhere along the road the dream always dies. If you work hard, you can recapture it, or replace it with other dreams. Like a statue of ashes, the past crumbles at a touch.

There were other times, other places, other people. To Johnny Kell, the world and all its occupants seemed unreal. They were the passing shadows of a fading dream. The world had not changed, but Kell had. He was a tangible ghost, recalled from the grave, an unwelcome Lazarus, incompletely back among the living. Wisely, he grasped that it was not the ugly things which had happened to him, nor even the dread threat he carried, which made the difference. He felt set apart, not accepted, and was not sure that he wanted to be accepted. But certain gestures are expected of the living, and from habit, he tried to make them.

Partly from boredom and loneliness, he thought of going back to work. In a limited field, he still retained his valuable skills.

Kell fed a coin in the pay visiphone and dialed. A rough, familiar, sour-humored face appraised him with frank dismay, admitting acquaintance, but lacking warmth.

"Hello, Johnny. How are you?"

"Fair enough, boss. How are tricks?"

"No dirtier than usual." The face waited, then. "It's your birthday, Johnny, you cut the cake."

Johnny Kell chuckled. "Practically my first birthday, if you want to call it that."

"I'll burn a candle. I wondered if you'd get around to me. What's on your mind, Johnny?"

"Just a crazy idea to see if my old job's open. I need something to occupy my hands and mind. You know what I can do and there's no fuss about hours or salary."

"I'm sorry, Johnny, but the answer is no. I've always liked you. I never believed you guilty in that business. And I'd like nothing better than having you work for me again. But I don't want a sword dangling over my head, and I won't subject the others here to it. I'd be forever looking at you and worrying. And you might start remembering old slights or fancied grievances."

"I have no grudge against you," protested Kell.

"You can't be sure of that, and neither can I. And we could never be certain some difference wouldn't come up. I worked long enough in jobs to know how people feel about their bosses."

"If you're worried about that, I should think you'd like having me where you could watch me."

"Nothing worries me but business and taxes. And I'm tougher than you are, Johnny. If you doubt that, and feel lucky, drop around and see me. Don't bother with an appointment. Just come shooting. You might even get in the first shot."

Johnny Kell shrugged. "I'm sorry you feel like that."

"So am I," snapped the face. "But

I can't hire you until after you've had your little hunting expedition. Come and see me then, if you still want a job."

Johnny Kell understood. From his pocket he took out the list of names and brooded over them. He wondered why none of them meant anything to him, failed even to spark hatred.

Inspiring neuroses everywhere, Kell wondered if he were becoming neurotic. Deciding he was, he selected a psychiatrist at random from the visiphone book's classified section, but failed to obtain an appointment. That, too, was predictable, but Kell found it amusing. Somewhere in the back of his mind a voice warned against developing megalomania. He hoped he could guard against it.

Kell took long walks alone. By day, with the sun shining, the world was warm and golden and beautiful. By night, there were the countless stars, distant, but not unfriendly. He was alive. He had money and health. On the prison workships, he had learned the value of solitude, and most of the time he preferred it. He trusted humanity as little as it trusted him, and for equally valid reasons. He felt like a convalescent, uniquely detached, seeing the world from a distorting angle. But it was a big world, and the rest of his life gave him ample time to find a crack to get back inside, to make a place for himself.

In the meantime, he was not unhappy. His loneliness need not go on forever. If the burden grew too great, he could always forsake his uniqueness, change his name and appearance, and lose himself in the vastness of humanity. In the meantime, his license to kill was actually a key to open many gates. From an originally malicious curiosity, he began to develop a genuine and sometimes profound interest in the study of human beings.

One name, at the top of his list, drew him. The judge who had sentenced him. Johnny Kell went to see the judge.

A robot butler insisted upon the formality of announcing his name. Otherwise, there was no opposition, and the judge sat calmly at his desk.

"I expected to find you huddled behind barricades," Kell said.

"Why?" asked the judge. "If you want to kill me, you will have no trouble. I won't like it, but I prefer that to living my life in a cage."

"It's not much of a life in a cage," agreed Kell. "I know."

"Yes, you should. Do you like it better outside?"

"It's not quite as I imagined it, but still interesting. I've learned that everything that happens changes you, and the people around you. Nothing is ever as good, or as bad, as you expect. I'm not here to kill you. I just want to talk."

Surprise lifted the judge's eyebrows. "What about?"

"About you, not me. I've heard you're resigning. Is that true?"

"True enough. The injustice I helped do you started me thinking too much about too many things. I've always tried to be a fair and impartial judge, but now I wonder if any man is qualified to pass judgment. As long as men lack the insight of God, monstrous injustices are bound to occur. Your case was not the only one, but it was the one which made me look deeper into my soul. I could not see God there, only a man, as weak and blind and foolish as the rest. I don't believe I could be a very good judge, feeling as I do now."

"Maybe you'd be a better judge."

"I doubt it. I've always had to fight a tendency to err on the side of mercy."

"I didn't notice that when you sentenced me," said Kell. "I got the maximum."

"So did too many others."

Kell took the gun from his pocket and placed it on the desk between them. "It's not loaded," he remarked.

The judge smiled wryly. "I learned long ago that it's the unloaded guns which kill. But I think I understand what you mean. Now that I know how it feels to be judged, I might make a better judge."

"I'm sure of it. I hope you will withdraw your resignation."

"Are you bargaining with me? A deal not to kill me if I will go back to the bench and do my best as a judge?"

"Not a deal. A request. But when you're judging any case, I'd like you to remember that there's always someone looking over your shoulder."

"You . . . or God?"

"Perhaps both."

As Johnny Kell left the judge's house, he was conscious of a sense of anticlimax, almost of depression. It was as if he faced clearly for the first time the fact that he intended to kill no one.

A shot, fired at close range, flash-blinded him, and something tugged at his coat. In his nostrils was the acrid stench of charred cloth. His first thought was grim amusement, remembering his unloaded gun on the judge's desk. His next was surprise that he felt no pain. Nobody could miss at point-blank range.

Marya, still bandaged, stood with a smoking gun in her hand.

"I couldn't kill you," she said savagely. "But I had to try."

"Why?"

"My husband killed himself. He was not like you, not hard and full of hate. He was full of fear."

Johnny Kell stared at her. "Perhaps you are luckier than you know. He was a fool. I told him he was safe from me."

"He didn't believe you. He said you were playing cat and mouse with us. Torturing us, laughing at us. You drove him to his death."

"Not me. He worried himself to death."

"He's just as dead," she whispered. "And so am I. Are you through with us now?"

"I'm sorry for you," Johnny said bluntly. "But you'll get over it."

"Will I? When?"

"Now if you want. Later, if you haven't the nerve to kill yourself or me."

Her lips writhed grotesquely. "You're an expert on killing, aren't you? You're Death, walking around and talking, cracking your whip."

"Perhaps I am," admitted Johnny Kell. "And perhaps not. I've never killed anyone. I've never even tried. I doubt if I ever will. But I'm not sure, so I'm not lying to myself about it. Don't you think it's time to stop lying to yourself about your world and the people in it. You can kill me any time you like. I'm not even armed."

Marya stared at Kell hopelessly. "You're not afraid. I can't even have the satisfaction of seeing you frightened, as he was. What is left?"

"A great deal," said Kell slowly. "But you'll have to find it for yourself."

Marya let the gun fall. She turned and walked away and did not look back. Johnny Kell stooped and picked up her gun, shook the remaining cartridges from it. Smiling, he dropped them loosely into his pocket.

One life was ended, another beginning. Kell knew now what he had suspected all along—he would never exercise his privilege of murder. He was not an avenging angel. If anything, Kell was the Fool Killer, living embodiment of old legend.

The Fool Killer never has to kill; it is enough if the fools know he is present, ready to strike, to keep them on their toes, make good citizens of bad, or at least careful citizens of those inclined to heedless cruelty or stupidity. Ahead stretched a long, lonely pathway, extending indefinitely into the dimension of time. Somewhere in his passage a bullet might strike him down, with Kell never knowing who fired it, or why.

Meantime, his very existence might do a lot of good. Not by threats. Just by circulating, going in and out of public buildings, private homes, private lives. A nudge here, a push there. Talking to people, advising, helping. Reminding the lax and corrupt of his presence. Politicians and crooks panic easily, the lesser evils yield to a glance. Even Scrooge reformed under sufficient pressure, and the breed has not vanished from the world.

For a while, it could be a better, kinder world—and when Kell was gone, Someone, somewhere, might appoint another Fool Killer to take his place.

Anyone can be a Fool Killer. Anyone, in any time and place.

Summoned by the shot, the judge ran out of his house. Embarrassed, he offered Johnny Kell his unloaded gun.

Johnny Kell laughed freely, happily. "Keep it as a souvenir," he said. "I won't need it. Someone will always hand me a gun . . ."

While the judge stared, Johnny Kell fondled the gun in his coat pocket. Unloaded. But an unloaded gun is always the most dangerous. Johnny Kell was the unloaded gun, aimed at the world . . .

THE END

ONE-EYE

A razor is a useful thing—
but not to a child who lacks
the dexterity to use it——

BY JOHN RACKHAM

Illustrated by Freas

THE steel bars were cold to his palms, and rough. He clenched his big fists, and the solid frame of the cell door shuddered with the intensity of his urgent need. From either corner of his eye he caught the sudden tension in the uniformed figures, but the man who stood between them, the quiet man, was still, and calm. Tom stared at him, stared at that face, between the bars. It was lean, and schooled clean of any expression save careful watchfulness. It was a steady, unwavering, reliable face, looking as if it would be kind, if it possibly could. After a long pause, the man spoke, and his voice was quiet and assured, matching his look.

"All right—open the door, I'm going in. He's harmless." Tom caught at the last word, like a thin thread of hope through the fog of fear in his muddled mind. Words boiled up, choking his tongue.

"Right!" it came, in a rush. "Harmless—don't hurt anybody—" and the cell door chattered again as the pressure in his mind shook his clenched fists. The paunchy officer standing on the right gave a harsh grunt of amusement.

"You seen what he did to those three guys in Clancy's, just now? He's harmless, all right, like I'm Cinderella."

"Did he resist arrest?" the quiet man asked, without turning aside.

"No—but I wouldn't count on that. He never busted up no bar before, neither." The officer on the left confirmed and amplified this.

"Never had no trouble of any kind with him, before today. This is something new. Better watch it."

"I will," the quiet man was unworried. "Open the door, now—" Then, to Tom direct, with a faint smile: "You mind if I come in? I want to talk with you."

Tom let go the bars, slowly, and retreated a step, shaking his head. This was something so new that his mind struggled to accommodate it. He was being asked did he mind! Somebody wanted to talk with him. "With"—not, as was more usual, "at" him. Actually wanting to talk. Talk!

"Don't talk good," he blurted, stepping back another pace. The cell door swung, and the quiet man came in, removing a soft hat, exposing a high, smooth forehead, and thoroughly disciplined, colorless hair.

"That can be quite a problem," he said, conversationally, tossing the hat on to the spare bunk. "Half the world's troubles come from not being able to tell the other fellow just what you're thinking." He sat, easing his pants' legs from his knees, and Tom found himself following suit, just as if he'd known this stranger for years. Right, too, what he was saying. Guy who can't talk good has a drag on him, a handicap—that was the word. A handicap.

"Of course," this understanding visitor went on, easily, "a lot of the trouble is because the other fellow isn't very good at listening. It takes skill, you know, just listening. Me, I'm an expert listener. If you want to talk—talk to me. I'm good at listening."

"You a doc?" Tom said the words first, then thought about them, but the stranger didn't seem to mind. He shook his head, slowly.

"Not the way you mean. Not for sick people. I listen—especially to people like you—" Tom felt the terrible black dread boil up again, into his mouth, twisting his tongue.

"Nothing wrong with me!" he roared. "Not crazy . . . not sick. Head hurts, sometimes, maybe . . . but not crazy. Am I? Well"—he leaned over the quiet man, crouching, his huge, thick-fingered hands crooked, outstretched, grasping for the reassurance he so badly needed—"am I?"

"I don't know—whether you're crazy or not," the quiet man said, softly. "I'm hoping you're going to tell me all about it, so that I can help you to get it figured out. That's part of my job, too, helping people who can't get themselves figured out. You want help, don't you?"

Tom nodded, violently, his whole frame involved in the need to express just how much. The teak-timbered bunk creaked under the agitation of his two-hundred pounds of muscle.

"I talk . . . tell all about me . . . you figure out? You're smart?"

"I try to be. We'll see, anyway. Start by telling me your name, what you do—and take it nice and easy. I'm not in any hurry. Smoke?" The hand that held out the cigarette, and returned, immediately, with flame, was quite steady. Somehow that easy steadiness communicated itself to Tom, gave him a sense of being able to lean on this man—and there was nothing strange in the thought, although physically he could have broken him in two with one hand.

"Tom Garbutt," he mumbled, weaving his head slowly from side to side. "Live . . . over there, on Creek Street . . . with Ma Gittins," he waved a huge hand, vaguely, caught a glimpse of the dry crust of blood on the knuckle, and brought it back to his side again.

"Mrs. Gittins—she has other boarders?"

"Only one . . . guy . . . Hallows—" Hallows! He was one of those three in Clancy's. Maybe that was some of Hallows' blood. He stole a furtive look at it. It was dry, flaking off in little brown shards.

"What do you do? I'm told you work in Scudder's place. That's pretty good work, isn't it? Needs plenty of skill?"

"Sure does!" Tom nodded again, violently. "Don't need much talking there. Handle machines . . . big units . . . 'dynes. Do all right. You ask Barney Scudder—he'll tell you. I like machines." He got that bit out fluently, for it was so simple, and so true. His hands crooked again, feeling in retrospect the cold clean bulk of the massive aerodyne units, with their belled snouts, and shining chrome grilles, and the whole of their hair-balanced works shielded under sleek steel. He liked them. They liked him, too.

"All right. Now, I gather that this . . . this excitement of yours . . . is something new, for you. I've lived in this town for some time now. I don't hear everything, it's true—but things get round. I've never heard of you before. You're not in the habit of causing a disturbance. So—there must be a good reason—?"

It flooded back, frighteningly, just when that quiet voice, that nice friendly manner, had made him forget; just when his tongue was loosening up, his mind clearing through the muddy swirl of not-understanding. A good reason! He had a reason, but —good?

"Two at a time!" he roared. "See things two at once . . . head hurts, eyes funny . . . can't see right. See him do it, then shout . . . then see him do it—" He clamped those big hands to his head and squeezed, as if to force his mouth and tongue to sort out sense from the impossible things in his mind.

"Take it easy—you're trying to figure it out. Don't do that. Just tell what it was—whatever it was—as you saw it, or felt it." That voice was still quiet, almost soothing. "Let me do all the figuring—remember? And now suppose you find a beginning, somewhere—and build it up from there?"

The beginning! Tom pondered, heavily, painfully. He tracked back, and back, and then—why, it was only this morning! It felt as if he had lived a whole horrible lifetime under the shadow.

"Am I crazy . . . 'cause I see things?"

"Depends on the things, doesn't it?"

"See things twice . . . two at a time . . . happen, then happens—!"

"Now—you're rushing it again. How did it start?"

"This morning," Tom started weaving with his head again. It helped. "Musta been . . . four . . . just cracking daylight . . . pain in my head. Woke up, all of a sudden. Shouted out, loud. It hurt," he explained, defiantly, "Folks think 'cause I'm big . . . I don't hurt. Feelings . . . just like them—!"

"If you prick us, do we not bleed? Yes—sorry—go on."

"Didn't bleed. No. Felt tight . . . like my eyes popping out . . . got worse and worse . . . then, click . . . in my head, and it's all right. Better then before. You know how guy can have pain . . . just a little bit . . . and not know about it . . . then it's gone away . . . and he knows—?"

"Oh yes," the quiet voice assured him, "that often happens. You have a small ache, and ignore it, forget all about it—then something happens to ease it—and you miss it. Like a clock ticking—you notice it when it stops. That's quite a common thing."

"Common! Good!" Tom expressed his momentary relief in a huge grin, then, remembering, scowled. "Hallows . . . he knocked . . . said, 'Whyn't you shut up . . . big ape . . . let a guy get some sleep.' So I went back to sleep." The words came easier as Tom discovered the simple pleasure of reliving his own experiences to an attentive audience.

"Breakfast next," he remembered, "Ma frying eggs. I sit by her elbow, at the table"—he gestured, sweepingly. "And then . . . then—" his new facility deserted him as the picture reformed in his mind.

"Then—?"

"Saw her swing round . . . with pan . . . and catch me . . . here!" he fought out the words, jabbing at the bridge of his nose, where the skin was still tender. "Splashed hot fat . . . hurt . . . eyes hurt . . . head hurt again. Shouted out, loud, and ducked down . . . like this"—he ducked his head, cringingly, kept it down. "Ma yelled . . . I waited, long time . . . then straightened . . . and she hit me with fat . . . then!" He strangled on a flood of words that would try to explain that he had seen it happen, and felt it—and then it *had* happened—again, and he had felt it just as badly—and he was silent, helpless.

"Let me see if I can get it right," the quiet man frowned, not at Tom, but at the effort of expressing this thing in sensible words. "You're saying that you saw what she was going to do"—Tom began to shake his head. "Not right? You saw her doing it—actually saw her—and saw her not doing it, at the same time—and your eyes and head hurt?"

"Right!" Tom shouted, then cringed as his great voice boomed round the cell. "Right," he repeated, more softly. "Then—she did it."

"Prevision," the quiet man murmured. "When did it happen again?"

"Right away," Tom realized, with hope, that this was, indeed, a listener who wanted to understand. The pleasure greased his tongue. "Picked up the paper. Ma Gittins going off . . . said I give her a fright . . . all my own fault . . . so I picked up the paper . . . reading the headlines . . . vice president Kinshaw. You read that? Said Kinshaw had heart attack last night, but not to worry . . . going to be O.K. . . . little picture . . . I looked at that picture—" He got that out deliberately, with careful emphasis. "It went funny . . . my eyes hurt . . . and he was dead."

The quiet man held his breath, soundlessly, then—

"Yes—and then?" Tom drew a deep breath, feeling again the tightness, the dark murk, the wrongness.

"I told her . . . Ma Gittins . . . all baloney, I said . . . he's dead. Hallows came in. Who's dead? Told him, too. Ma . . . she didn't believe me. Don't say that, in the paper, she said. Hallows . . . he don't like me much . . . got a dinky little watch on his arm . . . looks at it . . . we can get the news on T.V. he says . . . due now . . . and he switched on—" Tom stopped for a huge sobbing breath. Little beads of sweat irritated his brow, where the hot fat had scorched. He brushed them away with the back of his hand, felt the dried blood scratchy on his forehead. He tried not to think about the next part but it kept crowding into his mind.

"Just caught the newscast," he mumbled, reluctantly. "Guy looking like a funeral . . . deep regret . . . have to announce . . . Kinshaw dead!" The last words were a croak. He huddled back, away from the nameless something that lay between himself and the quiet man. "Then . . . I got scared . . . you know?"

"I know," the quiet man said, softly. "You realized then, for the first time, that there was something that didn't add up. How about the others, this fellow Hallows, and Mrs. Gittins?"

"Ma was scared . . . more than me . . . made me feel bad . . . stared at me. I shout at her . . . 'don't look at me like that!'" He roared the memory, angrily, shaking his head, denying the fear he had seen in her faded eyes.

"And Hallows?"

"Him! He don't like me much . . . narrow-gutted . . . scared of me all the time . . . looked sort of mean—" Tom groped for words to express the sneer, the instant disbelief. "Looked in the paper again . . . laughed . . . mean, poison laugh. Here, Ma . . . looka this . . . in the late news clip . . . see? The big ape knew it allatime . . . making a monkey outa us—!"

"But you hadn't read it, had you?" To the quiet man this seemed important, just as important as it was to Tom.

"Right! Never had time . . . don't read fast. They wouldn't believe me . . . wouldn't listen—"

"It was discovered, Tom, long ago, by better men than us, that it's well-nigh impossible to prove a negative. What then—an argument?"

"Nah! No good. Don't talk good . . . too much to say, all at once . . . came out, walked along creek a while . . . then down the block, to Scudder's."

"The garage, yes. Did you tell anyone there?"

"Nah! Not much talk . . . they say 'Tom, grab hold this, slap it over there . . . gimme hand with that, huh?' That's all the talk. Too busy with machines." The thick, effort-loaded voice softened now, as Tom dwelt on something he really understood.

"Did it happen again, there?"

"Yeh!" Tom squeezed out the single syllable between clenched jaws, the softness snatched from him by the quiet question. "Would have been . . . funny . . . you know what! . . . any other way . . . but . . . it was like this. I'm fixing up a new 'dyne unit . . . test-bench. Scudder, he tests everything . . . fresh out of the crate . . . it don't matter. Unit weighs hundred fifty pounds . . . you know about them, how they work, huh?" The childlike eagerness changed to genuine delight as the questioner admitted ignorance.

"Unit all beryl-steel, shiny, smooth, with a big mouth one end and a wire fence the other. Helluva sweet motor inside. Sucks in air, whoomps her out, whoooooo! Floater auto's got four, one by each wheel . . . and cute . . . don't spill much draft, nossir. Tilted vanes . . . air-stream bashes down, under, back up, in the unit again . . . smooth as cream . . . steer like armchair. No drive on the wheels . . . you know that, huh? Wheels just idle, for parking."

"You were going to test one of these units?"

"Getting ready for test," Tom corrected, humbly. "Me . . . I lift 'er on the cradle, screw in ring-bolts, hook up cables to thrust-collar, one, two, three, four, all round. Then plug in by gauge panel, then call Scudder. Then stand by wind tunnel . . . to hear howl . . . that's great!"

"Wind tunnel?"

"Sure thing! When unit blows . . . wind has to go some place . . . got big duction rigged . . . wind goes down there like—" Tom sought in vain for a suitable adjective, inhaled enormously, let out a whoosh of air with a hollow, hooting sound. "Unit slings back against cables . . . on thrust-collar . . . Scudder checks panel, then tries vanes, for side-thrust. This time—"

The eager look faded, became taut and fearful.

"This time . . . I see Scudder grab big power switch . . . then eyes go fuzzy . . . see two at a time . . . head hurts . . . see unit kick back wrong way . . . off hooks . . . through thrust-collar . . . blam! down wind tunnel. Scudder rolling over and over . . . coverall all busted, split . . . I hollered out!"

Tom choked off, seeing it all over again, seeing Scudder bowled like a ragged ball on a jet of air, across the test-shop floor, seeing him crack up against the steel leg of a bench—and seeing Scudder standing there, staring at him.

" 'What the hell!' he said. 'What the hell? You trod on something?' I don't like to say . . . but I got to . . . he's real kind to me . . . so I tell him . . . something's wrong. He looks queer at me . . . then . . . 'Well, all right. I'll check round.' And he does — keeps looking, wondering. He's thinking, maybe I'm crazy."

"And did it happen the way you saw it?"

"Right! Scudder . . . he's savage. 'Nothing the matter . . . you got the fidgets,' he says. 'Wasting my time.' Then he hits the big trip . . . and wham! the tunnel bangs like thunder . . . unit's all gone . . . Scudder's bashed against a bench . . . coverall split, busted with wind blast. Blood on his face . . . on his boot. 'Get the hell out! Jinx!' So I go out in yard and help, pushing repair jobs into rank . . . don't have to think for that—"

"Yes," the quiet man sympathized, "I can see where you needed a bit of time to do some pretty tall thinking. You had some decisions to make, too, about now. Were you satisfied, by this time, that you had something unusual—a gift, a talent—something like that?"

Tom nodded, heavily, not liking the idea, but unable to escape it, just as he had been helpless to dodge it while heaving and shoving in the service yard. He saw things happen, unpleasant things—and then they happened—and there was no way of getting out of that.

"Nothing wrong with me!" he shouted, desperately. "All right . . . don't feel sick . . . anything—" The big hands were clenching again, striving to come to grips with his torment, with the thought that he was trying not to think.

"Did you consider that you might have been the cause of these—unusual events, without knowing it?" The quiet man put an unerring finger on that secret fear. It was almost uncanny. Tom was up from his seat, catlike for all his bulk. Backed against the wall, he stared at his visitor, shaking his great head like a wounded animal.

"Don't hurt anybody," he choked. "Don't do anything bad. That girl . . . all scrunched up . . . wheels . . . blood all over . . . me, I didn't do it . . . didn't do it . . . didn't do it—!"

"Didn't do what?" That voice had a whiplike sting in it, suddenly. "What's this about a girl?"

"On the sidewalk . . . didn't shout this time . . . thought about that . . . when I was eating. Thought maybe it was me, shouting . . . so didn't shout—"

"You're rushing it again," the voice had quietened once more. "How about this 'eating'?"

"Got fired!" Tom waved his hands excitedly. "Scudder said . . . finished, you . . . unit dead loss . . . no jinx in my shop . . . paid my time . . . sacked . . . didn't do nothing!" Tom raged, speechlessly, at the injustice.

"So you went off to eat, and think, and you figured—maybe your shouts of warning were causing more trouble than they were meant to save—so you decided that, next time, you'd keep quiet—right!?"

Tom nodded, eagerly. This man seemed to have the gift of reading his mind, of putting in all the little trimmings that Tom hadn't got round to working out, making it sound like good, normal sense.

"Tom—my friend, you didn't know what you were taking on. Can you see it this way—say you were living among blind people. Would you keep your eyes shut all the time just so as to keep down to their level?"

Tom frowned mightily, groping after the sense, but it was too slippery, too remote for contact.

"I see all right . . . not blind," he wondered. "Look . . . my eyes O.K. . . . just go funny when my head hurts—"

"Yes, never mind. My error. Tell me about the girl."

"Came out from eating . . . Fay's Chow House . . . good grub . . . she was on the sidewalk . . . just stepping off . . . big eight-wheel rig coming . . . eyes go funny again . . . see her slip . . . under the wheels . . . go crunch, scrunch! Didn't shout . . . just ran, quick, grabbed hold her arm, tight . . . she was mad, like wet cat. 'Fresh! Let go of me—big ape.' she said. Jerked her arm away . . . and . . . and then—"

"All right, Tom—easy, now—easy. It's too late to undo anything. What did you do, afterwards? Anyone connect you with—?"

"Nah! Everybody rushin' and yawpin' . . . didn't take no notice of me . . . nobody ever does take any notice of me. Just stood there . . . struck . . . never seen anybody killed before—" His voice faded to a dull monotone, as if all emotion had been burned out, to be replaced by a cold, blind need. "Went into Clancy's. Never been in there before . . . never been in a bar before—" He shuddered, came back to the low bunk and sat, awkwardly, making the boards creak again.

The quiet man smiled, faintly, got out the cigarette pack again. When they were lit, he let his smile grow wider.

"Tom—if you'd wanted to prove that you're just as ordinary and normal as the next man, you couldn't have done it better. You wouldn't be the first, and you certainly won't be the last, to go to John Barleycorn for comfort. So that's how you came here—had one too many and got into a fight—?"

Tom stared at him, surprised, and the quiet man stared back, sharing the surprise. "No—? I was wrong, that time? You didn't get drunk? All right, what *did* you do?"

"Had couple drinks, maybe," Tom slowed right down, sensing dimly that there was something more than just sympathy prompting the quiet man's interest. "That's just while I'm thinking. Lot to think . . . head hurts when eyes funny . . . head-hurt stays 'til something happens . . . then it's gone. That's one thing." He paused, broodingly, then plodded to the next knot in the problem. "See the things going to happen . . . try to stop . . . but . . . if I stop . . . then they don't happen . . . so how do I see them . . . can't figure that one . . . don't make sense—"

"Good for you, Tom," the quiet man applauded. "You may not talk very fluently, but you're no slouch when it comes to thinking. You tried abstracting the common factors—that's very good. Then you ran right into a trap that has baffled some really smart thinkers—and it beat you. It beat them, too. No one's ever figured the way round that one, yet."

"You mean—" Tom was massively intent—"this kind of thing happens . . . all the time? Like me—?"

"Similar . . . same sort of thing has happened before—yes. Did you get any answers at all? What started the fight?"

"That was an answer. I figured this way. When I see things . . . it's only something bad . . . somebody hurt . . . maybe it's me doing it. So"—he clenched a massive fist—"I find out. I hurt somebody . . . on purpose . . . see what happens . . . see if head hurts, eyes go funny. I'm looking round bar . . . see Hallows . . . he don't like me much. Have another drink, and go over: 'Hey, you! . . . gonna knock hell outta you, right now . . . all right?' " He grinned, ferociously, at the memory of it. "Hallows scared green . . . fell offa his stool . . . shouted out: 'Help, help—the big gorilla is going nuts.' Two, three other guys get up . . . grab hold. 'Hey! Cool off, Bub—don't want no trouble here.' I tell them . . . no trouble . . . just want to see if eyes go funny when I'm going to hurt him. Then Hallows busts me one . . . on the nose . . . then I hit him . . . hit a lot of guys . . . but head didn't hurt . . . eyes all right . . . not funny."

"Proved your point, eh?" The quiet man chuckled, then was silent. Tom gazed at him, hopefully.

"You said . . . lots of other guys like me . . . what'd they do—?"

The quiet man was thoughtful, silent. After a while he stood up, paced as far as the barred window, and back.

"You have a gift, all right, Tom," he said, somberly. "A strange gift, an ability that other people don't have—but don't"—he put up a slim palm to check the outburst from Tom's lips—"gallop off with the idea that it's going to be easy—"

"I got an edge . . . ain't I? If I can play it right—?" Tom got to his feet, towering over the other, yet appealing to him. "You're smart . . . you tell me, teach me what to do. I'll use it good . . . I'm good guy . . . I don't do any harm. Don't want to hurt people. You'll help me, huh?"

"I'll help you, Tom, all I can—but it might not sound very helpful. You want the truth, don't you? If I have you figured right, you'd rather have it rough and honest than smooth and phony, right?" Tom stood quite still, all the bubbling, boiling nightmares coming back, wave upon wave.

"Right now, your best bet is to stay right here, until I can figure out how to get you into my care properly. To give you something to chew on—just think of this: A very smart man, many years ago, wrote a story about a man like you—a man who had heard of a country where everybody was blind. He figured if he could get there, he'd be all set. There's an old saying 'In the country of the Blind, the one-eyed man is king.' That sounds reasonable, but it's not, and this man found it out, the hard way. He got to the blind country, and they had him falling over his own feet, and knocking his head against things, in the dark, because that was their way, and he couldn't fit. He could see, and they couldn't, and it didn't do him any good at all—it was all against him. He was—well, different. He didn't fit—and they tried to make him fit—they wanted to blind him—to make him the same as they were."

"What'd he do?"

"He was smart—he got out, while he could. There wasn't any answer, not that he could find."

"You mean—it ain't going to do me any good?"

"I didn't say that," the quiet man looked away, began to pace to and fro. "There's got to be some way—but I can't see it, not yet. Are you going to take my advice, and stay here? I can fix that much with the police officers—"

"All right," Tom said, dully. "I guess you'd know better'n me."

"Good man. I'll be going now, but I'll be working on it. You can do all the thinking you want, in here. Quite safe, nothing can happen, can it?"

Tom Garbutt watched his only friend, the only person who had ever taken a real interest in him, go away —and he felt abandoned. Those last words hung, echoing, in the silence. "Nothing can happen." He tramped to the wall, to the little barred window—and cringed as the pain lanced through his head again, as his vision blurred, became duplex. He saw the whitewashed wall surging at him, felt his head knocking against it. "Knock my head against a wall," he thought. Everything was suddenly dark—the knifing agony was a fire—he hit his head against the wall savagely, but it was still dark—a roaring pain—then—it was just dark—and no pain at all.

"What d'you reckon, doc?" the paunchy officer demanded. "Did I do right? I figured he was something in your line. We never had no trouble with him up to now. You reckon he's gone over the edge?"

"Glad you did phone me," the quiet man said, tiredly, rubbing his hand through his trim hair. "He's sane enough, at the moment, but he won't be for very much longer, unless I can do something for him. I wish I could figure some way of getting him committed to my sanatorium, legitimately—" The shrill of a telephone bell cut him short, and they both sat still while the lean, gloomy officer took the call, making minimum replies to the faint squawks. His gloom deepened as he put down the receiver.

"Hallows just died. Never came round again. Makes it a killing."

"That's it, then," the quiet man sighed, "I'll get him that way. It's rough—but it may be for the best, in the long run. I suppose I'd better be the one to tell him. Hell—that's going to be tough!"

"Come with you," the paunchy one offered, and they tramped in silence until they stood by the door of the cage. Then the stout one cursed, queasily, fumbled for keys, went in, crouched, felt—and shuddered. The quiet man, after that first look, stood back. There was no need to check. Tom Garbutt had his answer, a final answer. As the stout one stood again, white-faced, he heard the quiet man mutter, softly: "One-eye—poor one-eye!"

When he had gone, the stout one chucked a thumb after him, growled to his gloomy colleague: "Reckon the doc's going soft upstairs, living with all those nut cases up there on the hill. 'One-eye,' he was saying. That guy had two eyes, same as you'n me. Nothing wrong with his sight."

THE END

PORTRAIT OF YOU

THE questionnaire we ran some months ago has, finally, been collected, collated, correlated, and the data worked up; the following figures came out of it. In a sense, it's a statistical portrait of you-as-an-ASF-reader. The median reader appears to be about thirty years old, male, a college graduate in one of the engineering sciences, making about eight thousand dollars a year, who's been reading Astounding since about his Sophomore year in college, currently employed in manufacturing industry.

Our Advertising Department is, of course, suffering from an increased level of acute frustration. It's obvious that we have an abnormally high-level readership, over one fifth of them in the over-10,000-a-year income group, about half of them decision-influencing executives in major manufacturing industries . . . and since science fiction isn't a traditionally accepted advertising medium, the people who should be advertising in the magazine, don't.

Oh, well . . . the Armed Forces held that space research was just stuff for science-fiction writers, too. The advertisers also hold that Astounding is just for science-fiction writers. Some day they may catch on too. . . .

Meanwhile, for your information, here's the statistics that came out of your answers to our questionnaire:

College Major	*Total*	*Male*	*Female*
Agriculture	.5	.6	—
Biological Science	3.7	2.9	10.4
Education	2.3	1.4	9.3
Engineering	29.5	33.3	—
English	4.1	3.3	10.4
Fine Arts	2.4	1.7	8.1
Foreign Languages	.8	.4	3.5
Geography	.4	.4	—
Healing Arts & Medical Science	4.3	3.9	7.0
Home Economics	.1	—	1.2
Journalism	1.1	.9	2.3
Law	1.7	1.7	2.3
Liberal Arts	1.1	1.1	1.2
Library Science	.4	.4	—
Mathematics	7.1	7.4	4.7
Military Science	.1	.2	—
Physicial Science	20.6	21.0	17.4
Philosophy	1.2	.8	4.7
Psychology	4.2	4.1	4.7
Science (unspecified)	.8	.9	—
Social Science	12.9	13.0	11.6
All other fields	.7	.6	1.2

Educational Level Completed	*Total*	*Male*	*Female*
Grade school	.3	.4	—
Some high school	2.0	2.0	1.9
Graduated high school	6.6	6.3	8.4
Attending high school	6.4	6.7	4.7
Some college	16.1	15.2	22.4
Graduated college	47.2	47.2	47.7
Completed graduate school	5.2	5.8	.9
Attending graduate school	4.6	4.9	1.9

Length of Time Reading Astounding	*Total*	*Male*	*Female*
Less than one year to four years	19.1	17.9	27.6
5–9	26.3	25.1	35.2
10–14	21.1	21.1	21.0
15–19	15.2	16.0	9.5
20–24	10.8	11.4	5.7
25–28	3.4	3.9	—
29–40	.8	.8	1.0
Since first issue	3.3	3.8	—

Industry (What does your company make or do?)	*Total*	*Male*	*Female*
Agriculture, forestry	.7	.8	—
Construction	1.2	1.2	1.5
Manufacturing	35.8	38.4	9.2
Trans.. Communication & Public Utility	4.8	4.5	7.7
Wholesale & Retail Trade	5.1	5.3	3.1
Finance, Insurance, Real Estate	3.7	3.5	6.2
Services	15.8	13.8	36.9
Education	10.3	8.7	26.2
Armed forces	7.8	8.5	1.5
Research & Development	8.4	8.6	6.2
Government	5.5	5.9	1.5
Misc. Industry	.9	.8	—

Present Employment Status of Astounding Readers	*Total*	*Male*	*Female*
Employed	82.5	85.0	63.5
Not employed	17.5	15.0	36.5

Sex of respondents	*percent*
Male	88.1
Female	11.9

Age of respondents	*Total*	*Male*	*Female*
13–17	6.9	7.2	4.7
18–20	7.0	6.8	8.5
21–25	16.8	16.1	21.7
26–30	20.1	20.8	15.1
31–35	19.2	19.6	16.0
36–40	12.7	12.1	17.0
41–45	7.2	7.8	2.8
46–49	3.6	3.6	3.8
50 & over	6.5	6.0	10.4
Median age	30 yrs.	30 yrs.	30 yrs.

THE END

THE ANALYTICAL LABORATORY

With two issues to report on, I'm pressed for space. First, the December issue:

PLACE	STORY	AUTHOR	POINTS
1.	Citizen of the Galaxy (III) (Conclusion)	Robert A. Heinlein	1.89
2.	Precedent	Robert Silverberg	2.21
3.	Danger . . . Human!	Gordon R. Dickson	3.21
4.	The First Inch	Jon Stopa	3.63
5.	Truce by Boomerang	Christopher Anvil	3.94

(*Continued on page* 148)

SCIENCE FICTION
SCIENCE FICTION

THE REFERENCE LIBRARY

BY P. SCHUYLER MILLER

KID STUFF

SHORTLY after Sputnik II began orbiting through the headlines, a children's librarian in Pittsburgh was asked what effect the news had had on children's reading. "Oh," she told the reporter, "we're swamped with adults who want something they can understand, about rockets and satellites. The kids have all gone up to the Technology Room."

Which is merely confirmation of my often-repeated contention that *good* juvenile science fiction is by no means "kid stuff"—and even when it is successfully written for young people, it is likely, as much great fantasy from "Alice" to "The Hobbit" has been, to be equally good adult fare. By the same token, factual books for young people may well be more ably written, better illustrated, and less expensive than comparable popularized science for adults.

In the latter months of '57 we had a series of examples of teen-age science fiction which spanned the whole range from a good book that, in my opinion, is not a good juvenile, to one that isn't good anything. There were also some more good fact books that I'll tackle a little later.

My first example is, of course, Robert A. Heinlein's "Citizen of the Galaxy" (Scribners, 302 pp., $2.95). It was serialized here earlier in the year as an adult novel, and that is what it is. I hope it doesn't mean that Heinlein has lost his touch where these books for young people are concerned, because he was writing stories that you could always recommend to parents, teachers, fans, and just about everyone else including the youngsters for whom they were supposedly published.

My complaint is basically this: the book skips around too much. No sooner has the author built up one fascinating and interest-provoking background, in the way no one else can match, than he drops it and starts on another. Thorby fighting his way up from slavery to status and puzzling out the riddle of old Baslim would have been a thrilling story in itself. Thorby winning his way in the strange society of the Free Traders—the part of the book to which Heinlein has devoted his most loving care—would have been even better, and I'll never forgive him for turning his back on the Gathering of the Families. Thorby as a green recruit in the Guard would be rather routine, but certainly every bit as good as the formula books on the theme that are ground out. Thorby as Rudbek of Rudbek, winning back his heritage, could have been made good Alger stuff. But Thorby hopping from one role to another is plain exasperating, and gives the young reader—and some old ones—no real time to get the feel of the disparate cultures, to understand Thorby's problem in each, and to try to outguess the author's way of pulling him out of whatever mess he's in.

For contrast, Alan E. Nourse's "Rocket to Limbo" (David McKay Co., N. Y., 184 pp., $3.00) may not be the work of polished art that any Heinlein opus is bound to be, but it's a better juvenile and a better story. It's not particularly original, except to newcomers to SF, but the problems are real, the background is exotic as an other-world setting should be, and you're dragged along with mounting speed until all the loose ends are traced down and tied up.

Lars Heldrigssen is a cadet ecologist, making his first star-jump on the *Ganymede*—supposedly on a routine training flight to Vega, but in fact on a secret mission to trace a lost expedition to Wolf IV. There's a threat of mutiny, there's the strange, bleak new planet with its invisible city, there's the peril and hardship of exploration, the disappearance of the *Ganymede*, the strange discovery of the wrong lost star ship, the secret of the city and its bizarre race . . . in fact, there's everything you could ask in a fast-moving, thrilling adventure puzzle.

Isaac Asimov, as "Paul French," does just about as well in a somewhat different vein in "Lucky Starr and the Moons of Jupiter" (Doubleday & Co., N. Y., 192 pp., $2.75). This is the fifth book in a series that is improving as it goes along, and as some of the TV-type corn is popped out of the early script. In it the Great Isaac is also playing with another of his private variations on the impossible violation of the three laws of robotics, which can be just as much fun when you're twelve to sixteen—if I read the book's alleged "age level" correctly from the code on the jacket—as when you were in on the first positronic robot yarns. This time there's a Sirian spy somewhere in the crew on Jupiter IX, who are building the first human antigravity ship, and Young Scientist Starr, his midget friend Bigman Jones, and a telepathic Venusian V-frog set out to block the sabotage and find the culprit. This is action adventure with a legitimately clued mystery, worked out with full attention to detail, but a very different book from Nourse's. It's the kind and level of science fiction juvenile that I'd take for a model if I were ever to try wriitng one.

In bitter contrast, you have the collection of original short stories by Richard M. Elam, "Teen-Age Super Science Stories" (Lantern Press, N. Y., 253 pp., $2.75). This is apparently the author's third collection of *really* juvenile SF; the others, which I haven't seen, were "Young Readers Science Fiction Stories" and "Teen-Age Science Fiction Stories." I am very much afraid that a lot of librarians who know nothing about SF are buying these books simply because "Science Fiction" is in the titles, and because the blurbs talk about spaceships, strange planets, heavenly bodies, et al. *American Boy* was publishing much better stories on these and more sophisticated themes nearly thirty years ago (Carl H. Claudy's yarns, some of which were expanded into books).

The plots are comic book level, and a good deal of the science is flat-out wrong on the basis of today's known facts. "Expedition Pluto," one of the nine stories, is built around the "fact" that a lost ship and a spacesuit are quickly smothered in frost in the subzero temperatures of Pluto. But this is precisely what would *not* happen, since the heated suit would be considerably warmer than its surroundings. It would be more likely to melt itself out of sight in a drift of methane flakes or the equivalent. Why, when there's good stuff to be had, must publishers put out this kind of antiquated, crude drivel? "Tom Swift" was a lot more mature. And the first rule dinned into every writer of children's books is that you don't write *down* to kids. You write *for* them, which is a very different thing.

Pubilshers of fact books for children certainly have no truck with "writing down." Willy Ley, for example, has started a new series of picture books for grade-school youngsters, "Adventure in Space" (Guild Press, Poughkeepsie, N. Y., 48 pp., $1.00 each). I've seen the first two, "Man-Made Satellites" and "Space Pilots." Each might be considered a brief, simple, boldly illustrated chapter in the story of how men will go into space. Teachers will do well to read them along with the kids.

Lester del Rey, another old friend, has done a handsome space book for Winston, "Rockets Through Space" (118 pp., $3.95). It seems to have taken the place of any more additions to the Winston teen-age science-fiction series. Another new artist, James Hough, has drawn pretty heavily on Bonestell and Finlay—but this is exactly what such a book needs. I particularly like his drawing of a galactic dust-cloud, introducing the final section that reaches beyond the step-by-step development of the early parts. The story is over-simplified, perhaps—but remember, it's the adults who are looking for just such books to help them make sense of the headlines. Junior high school, I'd say, and for the brighter kids in the elementary grades. High school could read it with profit, but the picture-book format may make boys and girls that age self-conscious.

Isaac Asimov also has a new fact-book on the shelves that is unlike anything I know for adult consumption. The title is "Building Blocks of the Universe" (Abelard-Schuman, N. Y., 256 pp., $3.00), and it is actually a handbook of the one hundred and one chemical elements discovered up to 1955—with a note for one hundred and two, announced last summer just as the book went to press. The publisher speaks of it as a textbook, and if it is used as such, so much the better for Isaac's chances of attending more SF conventions, because good texts sell and sell and sell. I'd call it a combination reference and running account of the elements and their significance in the world around us. I intend to crib heavily from it for ideas and facts for a high school science quiz I sometimes help Buhl Planetarium prepare.

I know very little, so far, about science fiction for below-teen-age children. One excellent book that I had laid by for this column seems to have been picked up while my back was turned. I'll try to retrieve it soon. George Scithers of Albuquerque, New Mexico, thinks I should extol the several SF themes in the "Freddy" series. Since Freddy is a very smart talking pig, a favorite with children for quite a few years, I'm bowing out only because I rate them as fantasy. (And one smart bookseller was passing out the new one, "Freddy and the Flying Saucer Plans," along with Adamski and the rest!)

* * *

Let me, this year, do better than I did last, when I didn't get details of the London convention plans until it was too late to pass them on to you.

Science-Fiction Times, just about the best buy in the fan publication field, has announced the basic plans for the 16th World Science Fiction Convention, the "Solacon," which will be held in and around Los Angeles, California, this coming Labor Day weekend. The place, Hotel Alexandria, Fifth & Spring, Downtown Los Angeles. The dates, August 29th through September 1st. (These conventions start earlier and last longer every year.) $1.00 cash, right now, will bring you progress bulletins from the Convention Committee; if you attend, you'll pay another buck at the door. Send your money to: Rick Sneary, 2962 Santa Ana Street, South Gate, California ("South Gate in '58").

THE THIRD LEVEL, by Jack Finney. Rinehart & Co., New York. 1957. 256 pp. $3.00

These short stories, many of them open fantasies, were all written for and sold to what we used to call the "slick" magazines—*Colliers, Saturday Evening Post, Good Housekeeping, Cosmopolitan.* They probably brought the author about ten times as much in hard cash as stories of the same length would have brought in this magazine — and John Campbell wouldn't have bought them, or most of them. You'd have screamed if he had. But if you want to know what kind of SF the general public wants, this is as good a sample as you're likely to get.

Taken all at once, these tales are bright, smooth, deft, glib—and monotonous. A couple of them are very good, if you separate them from all the others. The main trouble is that the author—whose "Body Snatchers" made a pretty fair SF movie a year or so back—rolls the same familiar theme over and over and over again. That theme is slipping into the past —time travel, if you like.

One story in the lot, with the most machinery showing, is a delight. It's "Quit Zoomin' Those Hands Through the Air," in which a Civil War veteran tells how he stole the Wrights' plane out of the Smithsonian and took it back to help Grant win at Cold Harbor. There's a quieter sample of nostalgia in "Second Chance," in which a remade 1923 Jordan Playboy takes its driver back to its own world. These are the best in the book.

But, over and over again, we're shown people escaping from the pressures of our present into the quiet pleasantness of the past—in one story, to another world in space. In the title story, you can sometimes find a third level in New York's Grand Central Station where trains will take you into 1894. In "Such Interesting Neighbors" you discover travelers from the future, moving nostalgically into the "good old days" of our own era. "I'm Scared" is the key-piece of this gambit: the whole structure of Time is breaking down under Man's desperation for an escape. In "Of Missing Persons" an intergalactic travel bureau gives people one chance to slip away to the Nirvana of the planet Verna.

The rest of the dozen stories, except one, are light fantasy. "Cousin Len's Wonderful Adjective Cellar" will slurp up excess adjectives and adverbs from a piece of gorgeous prose, or shower them on a spare one. "Something in a Cloud" is the visualized anecdote of two lonely nobodies settling for reality. "There is a Tide" introduces a ghost—who isn't dead yet. "Behind the News" has a wonder-metal from the stars that, cast into type, makes anything printed come real. "A Dash of Spring" is a couple of daydreaming young people getting together, and "Contents of the Dead Man's Pocket" is a suspense tale that might—or maybe has—made good TV.

MACH 1: A STORY OF PLANET IONUS, by Allen Adler. Farrar, Straus & Cudahy, New York. 1957. 212 pp. $3.00

The jacket claims that the author of this book "conceived the original story of *Forbidden Planet*," no matter who may have scripted the amazingly good movie and written the not so good book of the same name. This is another Hollywood script in words and scenes—maybe a treatment for something the writer hopes to sell, maybe a "novelization" of a picture that's being made. As a book, it has no originality but some visualization; as a movie, since it has every tired old element in it, it may be as good as *Forbidden Planet*—or as bad as that picture could have been without the superb production.

"Mach 1," somewhat amazingly, means what it says: a sort of sea-sled that can travel faster than sound, thanks to a Scientific Secret that should film as a spray of violet light. So it, its wolfish pilot-hero, and a beautiful Wave technician, are all space-napped by a flying saucer something like a bowl of Jello, and flown by folks from Saturn's moon, Ionus. These good people, the Grid, want our help in feeding a Monster named Karkong (son of King Kong?), who has the now standard habit in such films of growing without limit after nibbling at H-bombs, nuclear piles, and such. Of course there are adventures in the frozen-methane depths; of course there is an escape from Karkong; of course he follows the fugitives to Earth again; of course our hero is locked up as a Dirty Spy until it is too late, and Karkong is slurping up San Diego; of course—but why go on? The main note of novelty is an Heroic United States Senator who does *not* obstruct everyone and everything, but comes charging to the rescue with even the Russians behind him.

It's oddly fascinating, crude as it is—but then, I fascinate easy and repent later.

* * *

Apropos of films, I've been taking quite a beating from readers for suggesting that "The 27th Day" should make a good one, without reviewing the movie that was, in fact, made in England. It didn't show in Pittsburgh until long after the book review was turned in. It followed the book very closely, was pretty good but not outstanding, and was no more convincing than the book in the gimmick used to save the world. Probably ninety per cent of the monster-shows that are coming through are worse, but this still doesn't put the picture up with the memorable ones.

As for reviewing films here, the gap between writing and publication makes it impossible. New SF pictures sometimes show in Pittsburgh before Hollywood's press-agents have circulated the news that they're to be made . . . even before Forry Ackerman has announced that they're a gleam in someone's eye. Others never get here at all. By the time I've seen them, if I see them, and get word to you, they'll be ready for TV.

TWICE IN TIME, by Manly Wade Wellman. Avalon Books, New York. 1957. 222 pp. $2.75

Back in the early 1940s the two Standard magazines, *Startling* and *Thrilling Wonder,* were trying out every possible variation on every conceivable SF theme, in the interests of pure entertainment. Maybe there were few memorable stories or superior writing, but you could count on fun and frolics. In this period, Manly Wade Wellman, a very skilled practitioner who has since become far more so, was perhaps the first to do the yarn about the man from our time who was really Leonardo da Vinci. There seems to have been a reprint in 1951, that I don't remember. Now here it is in hard covers.

Leo Thrasher, nineteen-year-old physicist-cum-painter, builds a time reflector—a new gimmick, that has been freshly updated in the rewriting of the present version—that sends him back to the Italy of Lorenzo the Magnificent, Botticelli, Columbus, and of course Leonardo. He is cornered and hypnotized by a magician whose "ward" is Mona Lisa, and who milks young Leo's fuzzy memory of enough wonders to make them both prominent. And so it goes, with Leo blundering in and out of what is known of the real Leonardo's career, earning a name at painting and swordsmanship, fumbling in an attempt to fly, spending six years in prison, and escaping just in time to . . .

Far be it from me to cast aspersions on the author's Renaissance scholarship, but the fact is that it reads like a fast job of library work, much like one I once did for a similar story of time travel to Periclean Athens. Months went into it, but my story no more brought Athens to life than this does Italy. What makes the shortcoming so obvious is that Robin Carson's magnificent "Pawn of Time," out just a little while before Wellman's book, brings the same scene, fifty years later, to stirring life and reality with every sound, smell and color pushing out of the paper at you. That took several years of writing and certainly more of study: nobody can put that kind of work into a novelette for *Thrilling Wonder.*

THE SEA PEOPLE, by Julius C. & Wilkie G. Sizemore. Exposition Press, New York. 1957. 263 pp. $3.50

This seems to be a sort of story that a couple of nice people—Kentucky-born schoolteachers, who now live in Ohio and are friends of Midwestcon's "Doc" Barrett—wanted to write, and did, and had published, and here it is. Neither it nor they can be called pretentious. You meet some pleasant people who can breathe water, and who consequently live at the bottom of the sea. At first, they enlarge their community by discovering and recruiting other amphibians; later, love and matrimony take care of the perpetuation of the new race, the Navy is persuaded not to depth-bomb them, and all will be well in Aquaria.

I'd say that this is what an old-fashioned lit'ry man would have called a"conceit." You never really get the feel of the deeps. The technical problems of undersea life are, mostly, solved offhand—they're not even explained away. A reporter first discovers some of the sea people, then agrees to be their land contact. That plot crisis having sort of fizzled out, we meet the leading amphibians, one by one, find out why they are ready to leave the "world," and follow them into the water. The suggestion that the ability to breathe water and exist undersea without becoming a shriveled, soggy mess of waterlogged meat, is a mutation, is balanced by the possibility that it's something passed down from our amphibian ancestors and put to use under a stress of unhappiness on land.

The Sizemores call their book "a fantasy"—*not* science fiction. Why complain because it's really not what they didn't intend it to be?

THE DOUBTFUL GUEST, by Edward Gorey. Doulebday & Co., Garden City, N. Y. 1957. 32 pp. $2.00

I don't suppose you want to spend two bucks for a book that consists of twenty-eight lines of verse and sixteen full-page drawings—plus a jacket—that explain how an extraterrestrial, looking much like an anteater-snouted, all-black penguin in tennis shoes and a striped muffler, moved in on an Edwardian family. But sneak a look in the bookstore—you can browse right through in minutes—and try to get hold of the author's macabre limericks, "The Listing Attic."

DOOMSDAY MORNING, by C. L. Moore. Doubleday & Co., Garden City, N. Y. 1957. 216 pp. $2.95

We've waited a long time for this original novel by the talented fragment of "Lewis Padgett" et al. It turns out to be just about the only SF with a serious background of the stage—and I do not except Arthur K. Barnes' Hollywood-on-the-Moon frolics, nor Robert A. Heinlein's "Double Star," whose hero got into his predicament by being an actor, but was never really seen as one.

Howard Rohan, on the other hand, comes across to you as a has-been actor and a tormented individual, afraid to try a come-back until he is forced into it by the Comus (Communications, U. S.) government that has clamped a lid of iron-handed rule by conformity on the country. In California, however, some kind of revolt is brewing, and Rohan is dragged out of the gutter, sobered up, given a pick-up stock company, and sent to stump the hinterlands with a strange little play that he must stage exactly as written—down to the second's timing.

The people are real, especially Rohan, the details are good, and the puzzle of why Rohan is doing what he is, is nicely spun out. However, Miss Moore's strong forte has never been mechanism, and the great Anticom device is sort of anticlimactic. You wind up more interested in the people than in what they're doing. Is good, maybe?

OCCAM'S RAZOR, by David Duncan. Ballantine Books, New York. No. 230. 1957. 165 pp. 35¢

I think this is the best of David Duncan's three science fiction novels so far. Friends of mine can't stand it. Such is opinion.

I'll grant that there is nothing very original about the theme Duncan has used, of a man and woman, slightly strange, coming out of a parallel world and causing consternation and carnage in ours. The nominal science—the gimmick—that he uses is, however, more plausible than those in his earlier novels. He proposes a theory of discontinuous—he might have said quantized—time, such that the events of our universe occur in a series of pulses, while an infinite number of other universes co-exist with ours in the intervals while our time has paused and theirs is flowing.

Lael and Bel-Abon, primitives from one of these other worlds, are snatched into ours when something never quite explained occurs in an island laboratory. The author uses another new gimmick here, tremendously visual in its possibilities if he hopes to sell his book to Hollywood: the weirdly curved surfaces formed by soap films stretched from complexly warped wires. Since a war is pending, security is at a peak, and the immediate result of this innocent invasion is bloodshed and destruction, in which the laboratory is wrecked and assorted people killed. Eventually reason prevails, data are pooled, and Lael is sent home.

Dissected, this may seem ridiculous. But David Duncan is a skillful writer, who has introduced less scientific nonsense—if no more real sense—into this book than usual. It carries you along smoothly and rapidly, and I liked it.

PILGRIMAGE TO EARTH, by Robert Sheckley. Bantam Books, New York. No. A-1672. 1957. 167 pp. 35¢

This is a closely printed original collection of short stories (fifteen of them), mostly from *Galaxy*, although one was first published here and others come from *Bluebook*, *Playboy*, *If*, and *Today's Woman*.

Sheckley is one of a trio, with Ray Bradbury and Richard Matheson, who are confusingly alike at times, but who are slowly developing individuality. Where Bradbury has lunged ahead out of formula fantasy, Sheckley in particular has freshened up some of the old patterns, but he has also done his share of pure corn. It was a surprise to realize, from the last two stories in this collection ("Milkrun" and "The Lifeboat Mutiny") that he is responsible for the slapstick misadventures of the AAA Ace Interplanetary Decontamination Service, as slight a series as we've had since the days of "Hollywood-on-the-Moon" and Gerry Carlyle, the lady monster-tamer.

The title tale and opener is a typical *Playboy* fantasy of the lad from the galactic sticks who comes to Earth for its exotic love-life. "All the Things You Are" is a pun-title for a story about human explorers meeting an alien race and finding themselves utterly incompatible with everything on the other planet—everything but one allegorically pat thing. "Trap" is an interracial comedy of the trapper trapped, and a switch on the mother-in-law joke.

"The Body" is very Bradburyish—a story of a man put into a dog's body. "Early Model," on the other hand, might belong right here in Astounding: it presents an explorer hopelessly overprotected by his safety devices—a how *is* he gonna get out yarn. "Disposal Service" follows with a vignette of a macabre situation in a future society, the pay-off pretty clearly telegraphed. All these gag and gimmick stories are very short.

A more routine problem story, "Human Man's Burden," shows us an asteroid farmer, mothered by his solicitous robots, who gets the wrong mail-order bride. It is followed by a short, slight, nasty little bit of nonfantasy from *Today's Woman*, "Fear in the Night." (You've no doubt noted that the editor or author or both have alternated the pace quite well, to avoid monotony.) Then there's another gimmick story, "Bad Medicine," in which a homicidal maniac is treated by a Martian psychiatric machine, with disquieting results. It ends in a gabble of nonsense syllables that flow naturally into "Protection," whose beleaguered hero becomes involved with similar gibberish.

"Earth, Air, Fire and Water," published here in 1955, is pretty ordinary Sheckley and pretty ordinary science fiction: it's another switch on the theme of "Early Model," in which an explorer on Venus has to survive in spite of his spacesuit. Then there's "Deadhead," a snap-ending psi story about the stowaway on a Mars ship who is extremely handy but utterly useless there, until . . .

Finally, except for the two Decontamination Service frolics, there is "The Academy," also a Bradbury-style story about the misfit in a regimented society, who at last brings himself to apply for correction.

Taken as a whole, the stories are slick and slight, full of fast patter—"he would dwark Magnessen in a vlendish manner"—and smoothly written. They're pleasant enough as they go by, but I couldn't have described one of them to you if I had not had the book in front of me.

Solomon's Stone, by L. Sprague de Camp. Avalon Books, New York. 1957. 224 pp. $2.75

That mother lode of sophisticated fantasy, *Unknown Worlds,* is still sending tailings down the stream. This yarn was in the June, 1942 issue as the featured "novel." It's slight, but fun; Philip K. Dick used the same gimmick brilliantly in his "Eye in the Sky," a few months ago, but fifteen years are quite a while.

The gimmick, to get rid of it, is that our hero and his friends are chucked into their own "dream world," where each is the person he's always wanted to be. Dick took these mental universes one by one, and contrasted them; de Camp amalgamated them into the wackiest of alternate "astral" worlds, and used a demon to effect the transformation. This makes it fantasy; "Eye in the Sky" could be explained into the SF category.

Prosper Nash, an accountant with a yen to be a Cavalier, is hexed into this astral world where people and conditions must be described by de Camp to be believed. The situation rapidly deteriorates; he has to get hold of Solomon's Stone to get his own body back, but the chain of exploits along the way very nearly ruin him. I wish I knew what Fletcher Pratt brought to the incomparable Harold Shea "Incomplete Enchanter" yarns, because this isn't quite the same.

Empire of the Atom, by A. E. van Vogt.

Space Station #1, by Frank Belknap Long. Ace Books, New York. No. D-242. 1957. 162+157 pp. 35¢

Donald Wollheim is editing these Ace books, I'm told. He does it with his customary unevenness, bringing us such "class" originals as Rex Gordon's "First on Mars," reprints of many excellent hard-cover novels, and salvaged just-for-entertainment yarns from *Startling, Thrilling Wonder,* and the like.

The Van Vogt novel is abridged from last year's peculiarly scheduled Shasta hard-cover. (The Doubleday Book Club reprint was out before the original edition, except for a handful of copies seen in Chicago before Christmas '56.) This, in turn, is the novelization of the Clane of Linn stories that were originally published here in 1946 and 1947. It makes better sense than the "Null A" books, if you can adjust to civilizations with spaceships and swords.

Frank Belknap Long is an old-timer in the SF game, who is demonstrating his ability to handle a plot with near-Van Vogtian ramifications, loaded with action and color, with no pretensions of anything but story-telling. It starts—bango!—with a duel in the dark bowels of the Space Station, tosses in a vanishing heroine, sudden death, gruesomely strange masks that come from Mars, and winds up in a fantastic castle on Mars itself.

No matter how outrageously melodramatic yarns like this become, they are so much more plausible than the monster-stuff the film industry is turning out, that you have to wonder why the two don't get together. This I would watch in my neighborhood theater.

THE END

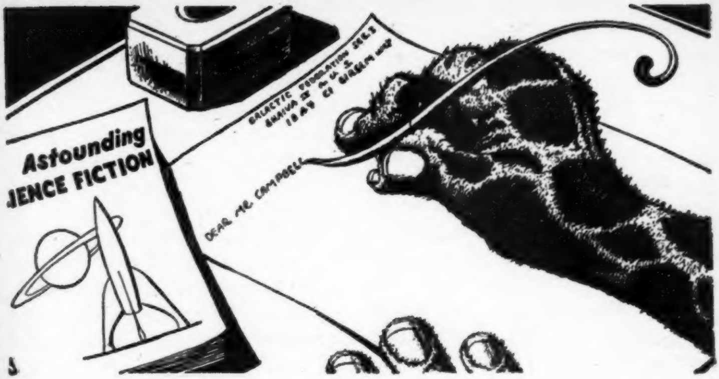
THE ANALYTICAL LABORATORY

(*Continued from page* 136)

On the January issue, there was practically a dead-heat race; the scatter of the point-scores, you'll notice, was very small.

PLACE	STORY	AUTHOR	POINTS
1.	All The King's Horses	Robert Randall	2.42
2.	Short History of World War III	Murray Leinster	2.46
3.	Unwillingly To School	Pauline Ashwell	3.00
4.	Cease Fire	Frank Herbert	3.06
5.	Guppy	Stanley Mullen	3.65

THE EDITOR.



BRASS TACKS

Dear John Campbell:

The boys in the back pages are apparently confusing Murphy's Law with the Finagle devices. Before you attempt any compilation it might be wise to consider a few fundamentals in order to simplify the necessary discriminations.

For one thing, Finagle's work is elaborate and leads to further elaborations, as is seen by the examples cited. Oh, what a tangled web we weave, when first we labor to finagle; we think it's tight, but once we leave, the untied ends begin to straggle. The present confusion is thus natural enough.

What a contrast with the classic brevity, even in statement, of Murphy's great discovery: "If anything can go wrong, it will." Not one word can be removed, not one word need be added. We would have to turn to Stupidynamics (e.g., "What goes up, goes up") to find greater breadth, purity, and economy. To qualify this with the words "in an experiment" is obvious piffle. All of life is an experiment.

Of course, we must recognize the unstated assumption behind this great formulation—it applies to life, and the conditions of life—not to all nature.

In nature, nothing can go wrong. It may be that the physical universe fails, in some particulars, to run as designed to run; this may conceivably be true; but such an assumption is certainly against all the evidence so far amassed. In fact, this is the theory behind Finagle's Constant—as you once said, "one of the few variable constants." If nothing can go wrong, then it follows that nothing has gone wrong, and from this we can safely arrange to make it appear that all is well. The rest becomes, therefore, a matter of method only.

What we need now is enough agreed-upon nomenclature to label these separate parts, because you know how kids are. They don't know a lefthanded monkey wrench from a right unless somebody turns it over to show the difference; but if things are properly stored in discrete bins, there is no further difficulty.

We should, and possibly could, search the literature for the first person to state that "Nothing can go wrong," but we should not be too hasty in deciding who said it first, because you know and I know that a lot of people have said that, sometimes even winning renown by making it their last words.

There is a statement, ascribed around Cambridge to Dr. Wayne Batteau, that "In an experiment, nothing can go wrong; we can always rely on the physical universe to run as designed," but this is perhaps apocryphal. Perhaps it was said by another physicist of the same name.

However, before labels it is first necessary to know what is being labeled, and once stated in this way, the matter is obvious enough and can be left to the clerical staff.

Murphy's Law, on the other hand, cannot be applied except from the executive level; it is predictive, a matter of policy, whereas the Finagle devices are matters and methods of recording only.

It may be helpful to consider the following corollaries. You will notice that anything derived from Murphy's Law begins with if and ends with a statement which can be verified from imminent results. Thus:

Law: *If anything can go wrong, it will.*

Then

1. If we lose much by having things go wrong, take all possible care.
2. If we have nothing to lose by change, relax.
3. If we have everything to gain by change, relax.
4. If it doesn't matter, it does not matter.—Alma Hill, 14 Pleasant Street, Fort Kent, Maine.

Also—If you can't detect it, why worry.

Dear John:

After reading H. B. Fyfe's letter in the February A.S.F., I realize that certain aspects of the book, "Finagle Factor," have not been mentioned. These applied particularly to construction and specifically to the delivery and erection of fabricated steel.

Laws of Applied Confusion

1. The one piece that the Plant forgot to ship is the one that supports seventy-five per cent of the balance of the shipment.

   Corollary: Not only did the Plant forget to ship it; fifty per cent of the time they haven't even made it!

2. Truck deliveries that normally take one day will take five when you are waiting for the truck.

3. When adjusting handrailing or fascia panels, also remember that the eye of the Chief Inspecting Engineer is more accurate than the finest instrument.

4. After adding two weeks to the schedule for unexpected delays, add two more for the unexpected, unexpected delays.

   Corollary: When ordering steel for delivery on a specified day, always remember that it will rain on that day and the men will not work.

5. In any structure, pick out the one piece that should not be mismarked and expect the Plant to cross you up.

   Corollary: In any group of pieces with the same erection mark, one should not have that mark on it.

   Corollary: It will not be discovered until you try to put it where the mark says it is supposed to go.

6. Never argue with the fabricating Plant about an error. The inspection prints are all checked off, even to the holes that aren't there!

I KNOW!—L. S. Rothstein, 71 Broadway, New York 6, N. Y.

And the flagpole arrives three months before the foundation girders, so it can be mistaken for part of the scaffolding and permanently lost.

Dear Mr. Campbell:

I always had a high regard for L. Sprague de Camp—unless I confuse him with somebody?—so I was rather surprised by his story "Aristotle and the Gun" which appeared in the February issue of Astounding Science Fiction.

It seems the writer of this story misunderstands completely human nature when he believes that writings, such as those of Aristotle, influence people. Writers are popular because they express prevalent feelings or opinions. In fact, it can be even argued that people these days see only what they believe, and refuse to see anything they do not believe in.

Aristotle's writings were influential and important only during the few centuries of scholastic learning in the middle ages—neither before nor after that period, simply because they expressed a philosophy which fitted in nicely with the then prevalent ideas. As soon as the Renaissance started and learning picked up, Aristotle was relegated to his deserved place as an interesting and historically important philosopher.

I believe the "motivation research" people are now trying to find out what really makes people make up their minds. If they reached a conclusion, I don't know about it. Meanwhile, however, you can see that even spectacular events, such as the Russian Sputnik, have failed to change people's outlook—they simply state that the Sputnik proves that they were right in the first place and everything would be different if only their recommendations would have been followed.—A. Muller, 139-12 232nd Street, Rosedale 13, New York.

That sounds good—but in that case what does start the "then prevalent ideas"?

My dear Mr. Campbell:

My good friend Professor Stilboid Fudge, of the Delta University mathematics department here in Amanita Gardens, brought to my attention, when I mentioned Mr. H. O. Hoadley's letter in the February issue of ASF, a most interesting fact which has, I believe, been neglected up until now.

It is well known that there are certain functions ($e^{-\frac{1}{x^2}}$ is one of them), otherwise well-behaved, which can not be approximated at all by power series. That is, it is conceivable that we might never be able to approach the desired result y by a series

$$K_F + K_B x + K_D x^2$$

where x is the experimental value, and K_F, K_B, K_D are the von Nagle constant, the Bugger factor, and the Diddle coefficient, respectively. What is more, we may not even be able to get close with an infinite series of this sort. In fact, in view of the von Nagle laws, it might be wise to expect this kind of pathological behavior all the time.

Professor Fudge has suggested the only way out of this seemingly impossible predicament: since there may be no analytic—that is, analytic in the technical sense—correlation between y and x, we must take

$$y = x + \overline{\underline{\Phi}}(x)$$

where $\overline{\underline{\Phi}}$ is determined by

$$\overline{\underline{\Phi}}(x) = y - x$$

Needless to say, this is no longer a crude approximation, but an exact method for getting the desired results from observed values. I think it only fair that $\overline{\underline{\Phi}}$ be called the Fudge Function.—Toadwart Moulder, 11 Leech Lane, Amanita Gardens, Louisiana.

So that's how one Fudges the results!

Dear John:

My gender will never afford me a better opportunity of writing a "Dear John" letter than that now offered. Miss Renfroe has inquired as to the nature of "force fields." Since opportunity reportedly knocks but once, I shall endeavor to take the unicorn by the horn and make reply.

Miss Renfroe's query immediately

subdivides itself into three separate, but interrelated, questions. Why force fields? How force fields? And, what force fields?

How did the idea start and why? How do you make a force field, technically speaking? And do force fields exist in reality?

Project N.O.R.

Nature, Origin, Realization.

Or, Never Offer Reply.

The origin of force fields in science fiction, along with a reasonable description of what the term represents, goes back to the old paradox about the irresistible missile vs. the immovable wall. Perfect offense meets perfect defense.

Of course, the paradox itself is easily disposed of with the realization that both objects cannot exist together in the same continuum. Yet it remains an interesting brain-teaser to attempt to picture the imaginative meeting. As all paradoxes, it is intriguing—a highly logical and realistic statement, except for the slight oversight of making no allowance for the existence of the universe.

Man likes to throw missiles—rocks, bullets, bombs. Man also likes to build walls—fences, shelters, prisons.

And in the process Man has learned that it is easier to break walls than it is to build walls that can't be broken. For example, our military might is of necessity geared to the offensive; no real defense exists against the super-weapons of today. Prisons testify further to the difficulty of building perfect walls. Society spends millions of dollars, thousands of man-hours, and tons of steel to erect the barred walls of a high-security prison.

And every day, it seems, some poor prisoner—without the aid of more than his own strength and wit—finds the means of "breaking" those mighty walls.

So, in our ceaseless quest for the irresistible and the immovable, it seems that our greatest strides by far are in the direction of the former.

Science-fiction authors find themselves in much the same boat. They need but little imagination to dream up "new" and better offensive weapons. All manners of bombs and energy-projectors and what-have-you's are at their disposal. But what about defense? What "wall" is to save the hero from those super-weapons? Modern technology provides no ready answer; we have no defense for our own weapons, let alone their still more lethal offspring. From an author's viewpoint, it takes a bit more imagination to provide for the defense than it does for the offense.

Matter offers no solution. Except for some form of super-condensed electron-stripped nuclei-packed solid, highly unportable to say the least, everyone knows that bombs and rays have little trouble disintegrating even the toughest materials thus far conceived.

So, the author must look to the energies for his defenses. A perfect defense should have several characteristics. It should be portable, unhindering, and perfectly effective. What better security then than a "wall" of energy?

And someone dreams up a "force field."

The hero carries around a small unit strapped to his waist and powered by tiny batteries. A belt-switch is flipped, and—presto!—an "immovable wall."

Picture it this way—the unit projects about the hero an invisible wall of some manner of undescribed energy or force—say, a space-warp. This wall conveniently passes such trivial necessities as fresh air and moisture, while blocking the entrance of all manners of rays, energy-beams, heat, explosive shock waves, and hurled objects. Also enemy personnel.

Of course, there are many types varying with the requirements of the particular story, but for the most part a clever author's force-field generator is both portable and effective, blocking all manners of evil forces. It is also unhindering. Light is passed through, for example; the hero can see, can move about freely, breathe, eat. and, happily enough, hold hands with the fair heroine.

So just imagine an invisible sphere cast around the hero—a wall that keeps out anything which might provide a quick end to both hero and story—and you have your "force field." And because its existence is limited to fiction, it really works, providing us at last with our "immovable wall" and frequent puzzlement as to how the hero will ever manage to get through the villian's own force field to bring the story to a happy conclusion.

Of course, the villain never has a force field generator, or forgot to bring one, or else finds that its batteries have very inconveniently gone dead at the moment the hero enters the room.

And so—happy ending!

As far as reality goes, force fields are a bit less available. Now a ray gun is easier to conceive. You simply build a unit that projects a highly forceful and concentrated beam of energy and things start disintegrating. This is not difficult to do. And when you do, everyone understands exactly what you mean—especially when the thing starts burning holes in the wall. In fact, could soldiers carry a few extra tons of equipment on their responsibility-weighted shoulders, ray guns would today be general issue in the United States Army.

Giant units that project powerful high-frequency sound waves have actually been constructed, to the detriment of such objects as their destructive forces are beamed upon.

But force fields, alas, are less easily engineered, and nobody is likely to know what you mean when you mention them. Oh, a beam of electrons can be deflected by a magnetic field rather easily, and so on, but this is still a far shot from the desired effect. The problem of turning pure energy into the form of a wall is quite an obstacle at present, sort of like banging one's head against a force field, if you'll excuse the expression.

To sum up then, we might say that nobody knows exactly what a real force field would be like, much less how to go about building one. What we do know is in terms of fictional effect. A force field is imaginable as a wall of some sort of energy, a wall that has the effect of providing a defense against the ultra-super-weapons of possible tomorrows. Perhaps those same tomorrows will see force fields become a reality.

In the meantime, use the old Null-A approach. If someone starts throwing rocks at you, don't bother fumbling for that little switch on your belt.

Just duck and run like hell!

You probably forgot to have the batteries charged, anyway.—Eldon M. Grupp, 1965-16th Avenue, San Francisco, California.

P.S.

Actually I was mistaken all along. I got suspicious when all the bigwigs kept pooh-poohing Russia's success with Sputnik, and I did some checking. I guess an honest-to-goodness force field has been a reality all along! They've just sort of been keeping the whole thing quiet because it'll be our first line of defense, I guess.

I did some checking like I said, though, and I even found out how to build one! Maybe that's why they kept it so quiet. It's so doggone simple that any good ham radio operator could whip one up from spare parts (standard stock!) in no time at all. And just think what that know-how could do to our beloved societies!

So just grab a piece of paper and start writing out a list. Head it: "Parts needed for building force field generator, XM42C." All you'll need is a soldering iron, a neighborhood electronics supply store, about 12 bucks, and a few hours spare time. Oh, yeh—and a strong desire to own your own pro-personnel force field.

Anyway, get yourself about 60 feet of no. 18 shielded wire, one 8 x 16 x 20" aluminum chassis, two klystron

The final page of this letter seems to be missing. Maybe because it just hasn't been written yet———

Dear Mr. Campbell:

I have been a more or less devoted reader of ASF since its birth in the early thirties. Never wrote to a magazine editor before (at least, not to a non-biological one!) and do so now in some trepidation.

The thing that now moves me is a crack by P. Schuyler Miller in Brass Tacks of January 1958, just now to hand. He makes a very rude remark about the gender of the duck on page 69 of the September number. Probably you have had several notes like this to pass on to PSM, but anyhow here goes: If he, P. Schuyler, will look up the matter of *non-European* domesticated ducks, especially those of India, he will find—much to his surprise, no doubt, as it was to mine—that in that part of the world, there seems to have been some sort of miscegenetical, mutational business among the ducks that has produced a type in which the *ducks* look as to the head, much like Mallard *drakes*. Fact.

I certainly did laugh myself silly over Gordon's tale, anyhow. And otherwise, PSM did seem to have a few possible extra points missed by Gordon. But then, one can't get in all the yaks in a limited number of lines. I believe you and Gordon did well to get as many as you did in the space provided.

Now I have started on this thing, might as well get it well done. I have one or two comments to add to the general hue and cry after your national goats re dudniks f-t-t-tniks, and so on.

I listened to Eisenhower some time since when he seemed to be trying to assuage the national distress over the seeming incapacity of the U. S. A. to turn out as many "scientists" as the U. S. S. R. May I say what I am sure many people south of 49 must have thought also? Why for Heaven's sake did Ike get himself such an utterly asinine writer to make up that lot of klatawa? (West coast Indian for loud, unnecessary noise). Who in his right mind thinks that spending a whole Fort Knox full of cash gold or something is going to produce even one more scientific research mind? Hells' bells, you can get all the crack technicians on earth to build computers and bevatrons from Aklavik to Cape Horn, and if you haven't gotten the minds to frame the proper questions to ask those machines and to try out in them, it won't do you as much good as if you hadda stood in bed.

You know, and I know, and so does any real scientist—I do not dream of including myself therein—that what is sadly lacking on this continent is not money, nor ability to do things in a large way; it is the ability to do things in a sincerely honest way—that is, to let any man who feels the need for it to just sit down and THINK. Not to figure out how to do something that must be profitable, in dollars or guns, but just for the sake of being intellectually honest with himself.

That means, that a youngster who has the ability to just sit quietly and figure things out must not be sneered at as "impractical" but should be encouraged, until he has shown he cannot think straight or to some purpose. And making it fashionable to be "intellectual" would be just as silly as the present system.

Sure, we have the same trouble here in Canada. Works this way: There are considerable funds going loose for research. Say you have an idea or a series of observations you'd like to try out. Might cost a few hundred or maybe a thousand dollars. Try to get those dollars. You will find much better chances of success if you ask for *five* thousand—your idea can't be worth much if it doesn't cost much to work on it. But those few dollars more are all it needs—and it does need them. Well?

You yourself have seen and shown in your Hieronymus machine how little is necessary to have a real good time with some new ideas. And, you certainly have found an appealing scheme for interesting original thinkers. (Lots of C.P.'s too, of course.)

What I am trying to say is, that the North American scheme of life needs a real good housecleaning. Time is long gone when the "dreamer" was likely to have his scalp lifted by Indians. Or his claim jumped by goons. A dreamer isn't necessarily lazy—I never heard that anyone ever considered Ben Franklin or Tom Jefferson such, and yet they were very much the dreaming sort of which we stand in need today. Pretty impractical, weren't they? And yet, they did not sneer at an idea just because they could see no commercial use for it.

Wonder why Eisenhower couldn't have come right out and said that what was needed was a community atmosphere that would encourage original thought. Wonder when the dear old American public will get the truth of the idea: there's darned little "classified" information on atomic energy that is worth the trouble of giving it house room. After all, the British and the Russians have at least as good fission and fusion bombs as the United States Defense Department. Why shouldn't they? Mighty little of the original knowledge of fact and theory was American in the first place. Sure, there are just as fine brains in the U. S. A. as anywhere else. Who says there aren't? But it works just the same the other way round. There are just as good brains in the rest of the world as in the U. S. A. And, here's the joker, they are freer for thinking outside the U. S. A. than they are inside it. Nope, I'm not a communist. Not even a socialist. But I sure am a believer in freedom of the mind. And like a lot of other Canadians, I wouldn't take the U. S. A. as a place to live and work, on a platter. Not even a solid gold platter (your government would want the gold for Fort Knox, maybe?).

It finally comes down to the original thing: intellectual honesty. Why cannot the general American public believe a man can be intellectually honest? Looks as if they don't see enough of it to know.

To switch to something wholly different, why is it that I have no memory of ever reading a story about the impact upon contemporary society of a really different organism? I am thinking about something like this: Man or men go away either to another planet or another culture and there by technical means yet unreached by us the genomes of himself and companions—*genome* is the complement of genes possessed by any one organism—are altered to produce the necessary physical body—phenotype—for survival under radically differing environment. No interference with mentality or psyche, but it *would* be enough to, let us say, make all the dogs in the neighborhood howl—or maybe start all the crickets madly chirping. Might make 'em a center of attraction for all the Luna moths in the district. Anyhow, it would be a nice situation for the pore returnees, to say nothing of the impact on their old friends in the old home town.

I once went and wrote a couple of thousand words on such a topic. Being more or less of an ecologist the possibilities intrigued me. Don't you have someone on your string who is a good ecologist? I am not a professional fiction writer myself, or I might annoy you with more than the question. Have never even been a FAN. Don't know any. Though I do hand your editorials and I. Asimov's articles to my students in general ecology and biogeography for mental stimulation! As I gather, I am only one in hundreds doing this. Have done it ever since that one on the electron microscope in 1945; I had just come from a meeting of the local branch of the Chemical Society of Canada where we had a talk on the same by Watson of Toronto, one of the originators of the instrument. Your article had better illustrations than the inventor could give us! Incidentally, I had my changelings forced to live for self-protection on inaccessible islands of the B.C. coast—ran into one or two such on seaweed surveys during the last war. Might have put them in the mountains of central Tibet or western Bolivia for that matter, only they had to have high technology nearby for their own purposes. So Fuegia or Kerguelen was out. So was Central Australia, from the heat.

Oh, well. Anyway, how come I haven't seen something of that general nature? Is it too old hat, or have I just missed it?—R. G. Mills.

It's a lovely idea for a story . . . but you're the one who had it, and you have the flavor of it in mind, so you're the one to write it!

Re science: I think it is necessary to sharpen our definitions, and recognize that "science" and "ingenuity" are, actually, mutually exclusive. The true scientist is like an historian, he explains what other men do—but historians never make history.

THE END

The trouble with those Russians is they're so suggestible—everything we talk about, they do.

(*Continued from page* 7)

post out in the thitherto Unknown Outside . . . that immediately becomes a new postulate, so the area is instantly inside the new postulate system!

Research necessarily includes both processes—and if either one is omitted, the result is not true research.

Under current social dogma, *research is antisocial!* Only insearch is socially acceptable; if you cut a process in two, and throw away one half, you do *not* have the process any more.

To show that a particular culture holds a particular postulate-concept, is always difficult. To show that our own culture holds a postulate concept which it denies holding is extremely difficult . . . when you're trying to show that to members of that culture!

Certainly America vigorously insists on its high regard and belief in the value of Research.

Yes . . . but . . . "I know what you *say,* but what do you *do?*"

What America does in fact value most highly is insearch. But exsearch is culturally rejected, and exsearchers are punished!

Let me validate that statement.

The most highly organized group of professional scientists, with the longest period of recognition as a group, and the group most fully expressed in legislation, is that of the Medical Doctors. The forces that are still vague, and poorly focused in other fields have had time to crystallize and clarify their consequences in Medicine. It takes time to work out the logically deducible consequences of any given set of postulates; in the older field of Medicine, those postulates have been worked out. Therefore the results are more clearly visible.

The same essential forces are at work elsewhere; I start with Medicine solely because it has had more time to clarify the consequences of those forces.

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A culture expresses its philosophy in its laws; if the philosophy holds human life cheap, so do the laws. If the philosophy accepts slavery, there are laws about slavery. If the cultural philosophy accepts research, there are laws about research. Patent laws, for example. The laws regulating Medicine represent the interaction of the philosophy of Medicine itself, and the culture; each finds expression in the resultant legislation. If either Medicine or the culture were violently, fundamentally opposed to an idea, the laws would be changed. The present situation is decades old.

It is, then, legitimate to argue that whatever the laws hold represents something not unacceptable to the philosophy both of Medical Science and American culture.

Suppose a patient comes to a doctor, and careful examination reveals that he has leukemia. His own doctor sends him to specialists, to a clinic, and it is definitely determined that this individual has leukemia.

As of now, leukemia is an invariably fatal disease; the treatment methods accepted as standard by Medical Science, in other words, invariably fail to produce cure. The mortality rate is one hundred per cent.

Now consider two possibilities:

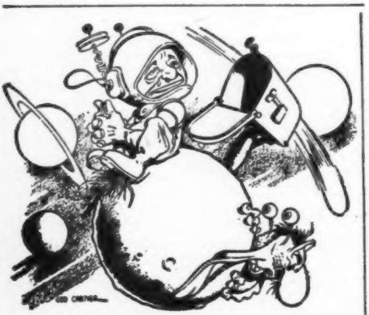
1. The doctor treats his patient according to standard Medical procedures.
2. The doctor treats his patient according to an unorthodox technique of his own.

If he uses Standard Operating Procedure, he knows with very high certainty that his patient will die. He does so; the patient dies.

If he uses an unorthodox treatment of his own on a group of patients, let us say he gets a thirty per cent rate of cure, while seventy per cent of his patients die.

Under the second situation, the doctor can be harassed by malpractice suits by the family of any of his patients who die. If he used the orthodox procedure, *in the full knowledge that it would fail,* he cannot be prosecuted.

The culture, and Medical Science are in full agreement; if it is orthodox, it's "good," even if it never works—but if it is unorthodox, it is "bad," even if it succeeds!



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Suppose a doctor treats a leukemia patient by a new and unorthodox method, and the patient survives, recovers completely, but his unorthodox curative drug causes a side-effect that produces complete loss of hair. The doctor can be sued by the patient.

When Ehrlich introduced 606 as a treatment for syphilis, some individuals died of arsenic poisoning as a result of its use. Ehrlich was violently attacked; it took a trial to clear him.

If a doctor used an unorthodox method, and used it successfully—he would still be liable to expulsion from the Medical Society.

Now *if* the doctor could show that his unorthodox treatment both worked, and was logically deducible from accepted postulates—he would be let off with a very severe warning, and most definitely told not to do *that* again.

Reason: He violated the postulate: "All new treatments must be accepted by the Authorities before they can be tried."

Both Medical Science and the culture must approve in actual fact of this attitude expressed in our laws: if it's orthodox, it's good, even if it never works, while the unorthodox must never be tried, even if the orthodox method is known to fail every time.

Now consider passing a law to this effect: That a doctor who uses a known method of treatment, under circumstances wherein it is known to fail invariably, is guilty of malpractice and may be sued by his patients.

An immediate consequence of this would be that every doctor who used standard, orthodox treatment on leukemia patients would automatically be open to malpractice suit. Those methods are *known* to be inadequate; why, then, should the society tolerate their continued use?

Under such a situation, doctors would be forced to do exsearch work on the problem. Inevitably, some progress would be made. The time, effort, and money now being thrown away on known-to-be-useless treatment of leukemia victims would, at least, yield some genuine research benefits to the society.

Treatment by rubbing with redistilled essence of rattlesnake oil could not be less valuable than treatment by a method *known* to be futile.

But—to establish such a situation is to establish the proposition that exsearch is a tolerable, even a valuable thing.

Obviously, no matter what the culture, and Science may *say* about that, the simple fact that the laws are what they are show that they *do* something entirely different. They *do* suppress exsearch vigorously.

As I said, I cite Medical Science only because it is longest established, and most thoroughly embodied in laws. The fact that the culture accepts those laws shows clearly that the philosophy behind them must be not-unacceptable to the culture. Then we should be able to find the same philosophy expressed elsewhere in the culture, though perhaps not codified in so clear a form as in the medicolegal instance.

Consider a business executive's problem when an inventor comes to him and claims he has a wonderful new idea.

The executive's first move is to call in his professional experts in the field involved.

Assume that there is no professional jealousy whatever involved; that the professional experts are honest, sincere, and well-trained, and that the inventor's idea involves an exsearch step that flatly violates what they *know* to be true.

The professional experts turn down the idea. "It's manifestly impossible; it would involve a violation of Frahmstahl's Law if it did work! If he presents a 'demonstration' of his idea, it must necessarily be a hoax . . . or at best it's a mistake."

If the executive plays a hunch, and backs the inventor, despite the honest advice of the professional experts . . . his board of directors will be decidedly hard to satisfy. His action is not logically defensible. Even if the inventor has presented a demonstration that convinces the executive, his action is still indefensible, in view of the testimony of the experts.

Furthermore, even if the inventor proves to be right, and his device does actually work, the executive will *still* have a rough time with his Board! Even under these conditions, their attiutde will be, "Welllll . . . you got away with it this time, but only by luck! Don't ever do any such illogical thing again, though; understand?!"

In a logic-based culture, only logically defensible research is acceptable—and that means insearch only.

We hear a lot of discussion of the vital necessity of more "fundamental research" today.

Take a look at the laws—at what our culture *does*—and judge what "research" means to them.

Somebody formulated the motto: "Don't undertake vast projects with half-vast people."

A research plan that tolerates only insearch, and punishes exsearch, however big a project it may be, is only a half-vast program.

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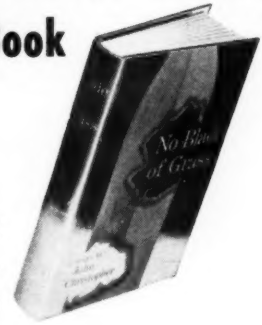

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—Continued on other side